ENABLERS FOR ADOPTION OF E-LEARNING TECHNOLOGY IN ANTI-MONEY LAUNDERING TRAINING IN UAE BANKS

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Abstract

Like other organization-wide compliance training regimes, e-Learning technologies also provide an ideal platform for anti-money laundering training in the banking sector. The past 9/11 environment and the recent monetary penalties borne by banks engaged in money laundering activities make the adoption of this technology even more impending. This thesis develops a model for investigating the diffusion of e-Learning technologies in the banking sector.

The model incorporates factors from a host of theories including Innovation Characteristics (Relative Advantage, Compatibility, Complexity, Triability and Observability), Organization Characteristics (Top Management Support, Championship, Centralization, Formalization, Internal Influence, External Influence and Organization Slack), Environmental Characteristics (External Pressure, Competition and Coercive Influence), E-learning Readiness, Stages for Anti-money laundering, Banks Categories (Innovators, Early Adopters, Early Majority, Late Majority and Laggards) and Degree of Adoption. This model is subsequently applied to examine the extent to which e-Learning technologies for anti-money laundering training are being used in UAE banks.

This research uses a qualitative research approach through a questionnaire to conduct the investigation. The exploratory study incorporating most major banks in the UAE shows that a host of usual factors related to Innovation, Organization and Environmental Characteristics do not explain why certain banks have not adopted the technology for e-Learning in the UAE. However, E-learning Readiness and the perceived Complexity of the e-Learning technologies seem to explain why banks have not adopted e-Learning.

This thesis makes two contributions. First, a detailed model incorporating a large number of factors to study the diffusion of e-Learning innovations in the banking sector is developed. Secondly, this model has been applied to banks in the UAE to determine the characteristics of factors that have led to the adoption of this technology.

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Chapter 1
Introduction

This research studies the use of e-learning for anti-money laundering (AML) among banks in UAE. The research examines factors that affect the adoption of e-learning for anti-money laundering training in the banking industry in the UAE. The primary research objective is to develop a framework for banks to consider when formulating strategic plans for a successful diffusion of e-learning as a technology within their organizations. Specifically, this exploratory research examines various factors affecting the adoption and utilization of e-learning for anti-money laundering in banks in the UAE. This research uses a qualitative research approach through a questionnaire to conduct the investigation.

The aim of the research is to determine the extent to which banks in UAE are using e-learning to address the regulatory compliance issues of anti-money laundering and identifying the areas in which e-learning might help in achieving the compliance level. The outcome of the research is a framework that helps improve our understanding of e-learning diffusion and to develop an improved model for adoption of e-learning for anti-money laundering (AML) training.

This chapter provides an overview and outlines the scope of the thesis. The chapter explains what is anti-money laundering, what is e-learning and a background of the research.

1.1 What is Anti-Money Laundering (AML)?

UAE central bank defines money laundering as “the purchase of securities with funds, whose source is not identified accurately, or emanating from an unknown or disguised

source, so that it appears to have originated from a legitimate source, where in fact it has not." [1]

Money laundering is considered one of the vital problems that affects security of the financial systems of a country. Money laundering is defined as the process of the criminal profits to cover their illegal origin where this process enables the criminal to use these profits without jeopardizing their source. When a criminal activity generates large profits, the individual or group involved must find a way to control the funds without attracting attention to the underlying activity. Criminals do this by masking the sources, changing the form, or moving the funds to a place where they are less likely to attract attention [2], [3].

1.2 Research background

During the last decades, money laundering has emerged in financial systems due to the evolution of information communication technologies (ICTs). In order to control money laundering, new international, regional and national organizations have emerged to provide guidelines and dictate the rules that jurisdictions have to put in place and to which financial organizations (i.e. banking organizations), have to comply with. Hence, it is important to understand the way in which regulators and banking organizations interact to develop and implement anti-money laundering (AML) regulations which are aimed at minimizing the risk of money laundering activities. [4]

In recent years, and especially since the events of September 11, 2001, worldwide efforts show heightened importance to combating money laundering. Anti-money laundering programs are now considered as a key tool to ensure the quality of a bank's

reputation and integrity in the market. This is due to the increased risks and penalties of the USA Patriot Act, and due to a recognition of the importance of identifying suspicious transactions [5].

The International Monetary Fund (IMF) and the World Bank have now become vigorously involved in anti-money laundering issues, and they have included anti- money laundering issues into their country assessments. They are also providing technical assistance to help strengthen the anti-money laundering and anti-terrorist framework in member countries. According to Celent Communications, financial institutions spent an estimated $632 million on anti-money laundering software and related hardware and services between 2003 and 2005 [4].

In addition, adoption of anti-money laundering technologies is becoming a fact, as banks around the world increasingly see the need to comply with U.S policies. In Europe, a number of countries, including the U.K. and Germany, have had anti-money laundering regulations on the books since the early 1990s [6]. While in Asia, countries that have recently adopted or are working on new anti-money laundering regulations include China, Japan, India, Oman, Pakistan, the Philippines, South Korea, Thailand and the UAE, to name a few [4]. Accordingly, organizations not only have to adapt current systems and processes to meet these new regulations, but they face a challenge in having to quickly educate their large and geographically distributed workforce as well [6].

Banks must conduct ongoing education programs for the staff to review money laundering techniques, anti-money laundering procedures and changes in applicable laws and regulations. Regular training needs to include procedures on how to identify and follow up on unusual or suspicious activities. The bank also must train not only all

personnel who have account relationships but also train appropriate back-office personnel. Hence, all new employees need guidelines concerning anti-money laundering procedures [7].

1.3 What is E-learning?

E-learning uses information and communications technologies (ICTs) to deliver content (learning, knowledge, skills) on a one-way or two-way basis. One-way (asynchronous) technologies include broadcast television that delivers learning content, film, video, digital video disk (DVD), computers, CD-ROMs, internet/intranet/extranet networks and wireless technologies. Two way (synchronous) technologies, on the other hand include teleconferencing, internet/intranet networks, web conferencing and wireless technologies [8].

Since compliance requirements often changes, e-learning provides an effective method of training bank employees on the newest regulations. However, to use this technology effectively, banks must ensure that employees are aware of the available training and that the coursework meets their needs [9]. If banks decide to join and expand their e-learning intervention, it is important to assess their readiness to utilize technology in order to implement e-learning successfully and to adjust their e-learning implementation strategies. Therefore, there should be a complete readiness assessment for e-learning in order to decrease the risk of any failure in implementing e-learning for anti-money laundering in the banking industry [10].

Organizations across all industries are adopting rapidly e-learning strategies to meet compliance issues. By reforming educational content, reducing travel costs and allowing

organizations to implement training programs, e-learning is considered as the most effective solution to educate employees in meeting regulatory compliance as well as keeping them aware of general industry changes [6].

The research proposed here examines factors that affect the adoption of e-learning for anti-money laundering in the banking industry in the UAE. The research also develops a framework for banks to consider when formulating strategic plans for a successful diffusion of e-learning as a technology within their organizations.

1.4 Structure of the thesis

This thesis consists of seven chapters. Chapter 1 introduces an overall view of this research. This chapter addresses the research background, the research problem statement, research questions, research scope, and objectives and aims. Moreover, the definition of e-learning and anti-money laundering (AML) is given in chapter 1.

Chapter 2 reviews the literature related to e-learning and AML in the banking industry and in UAE banks. The purpose of this chapter is to review the previous relevant research studies regarding implementation and diffusion of e-learning innovation for anti-money laundering training within an organization. Specifically, this chapter aims to provide basic knowledge on how innovation diffusion theory could assist in explaining e-learning implementation in the banking industry.

Chapter 3 introduces the theoretical background that helped in developing the research model and to examine the factors that affect the adoption and diffusion of e-learning into organizations. This chapter presents the theoretical framework and a model for the diffusion and adoption of e-learning.

Chapter 4 highlights the steps that were used to design and conduct the survey. This research uses a qualitative research approach through a questionnaire to conduct the investigation based on the model presented in the earlier chapter. Specifically, the survey examines various factors affecting the adoption and utilization of e-learning for anti-money laundering in banks in the UAE.

Chapter 5 presents a detailed analysis and discussion of each variable that was presented in the survey. Moreover, this chapter demonstrates the findings that related to the research questions. Chapters 6 and 7 discuss the research contribution made by this work and present recommendations for further research and practice. It concludes with suggestions of future research some that needs to be explored.

1.5 Summary of Chapter

This chapter provides an introduction to this research study. The research will focuses on determining the extent to which banks in UAE are using e-learning to address the regulatory compliance issues of anti money laundering, identifying the areas in which e-learning might help in achieving the compliance level. Finally an outline of the thesis structure is given.

Chapter 2

Literature Review

The purpose of this chapter is to review the previous relevant research studies regarding implementation and diffusion of e-learning innovation for anti-money laundering training within an organization. Specifically, this chapter aims to provide basic knowledge on how innovation diffusion theory could assist in explaining e-learning implementation in the banking industry. This chapter is organized into three sections. First, the review begins with issues related to the nature of the banking sector in UAE. Second, the chapter highlights the history of anti-money laundering (AML) in UAE banks. The last section reviews the relationship between e-learning and anti-money laundering (AML) and benefits of e-learning. These sections provide a broad view of e-learning technological innovation and e-learning for AML.

2.1 The nature of the banking industry in UAE

The banking industry makes a significant business contribution to many national economies and to the economic growth. Adoption of technology in various operational areas plays a critical role in deciding the leader and the laggard in the banking industry. Since bank employees typically come from different educational backgrounds it is essential to enhance their awareness and transfer of knowledge and technology in an easy and efficient manner. According to the UAE central bank, UAE's banking sector is one of the most competitive, with nearly 47 banks operating in the UAE [11]. With intense competition, banks in the UAE have struggled to improve their customer service levels and to launch innovative products. According to the UAE central bank, Figure 2-1 shows

that there are more than 20,000 people working in the banks who should be trained. Moreover, Figure 2-2 indicates that for the 47 major bank operating in the UAE are geographically dispersed because there are more than 500 national banks and branches and more than 100 multinational banks and branches in the UAE.

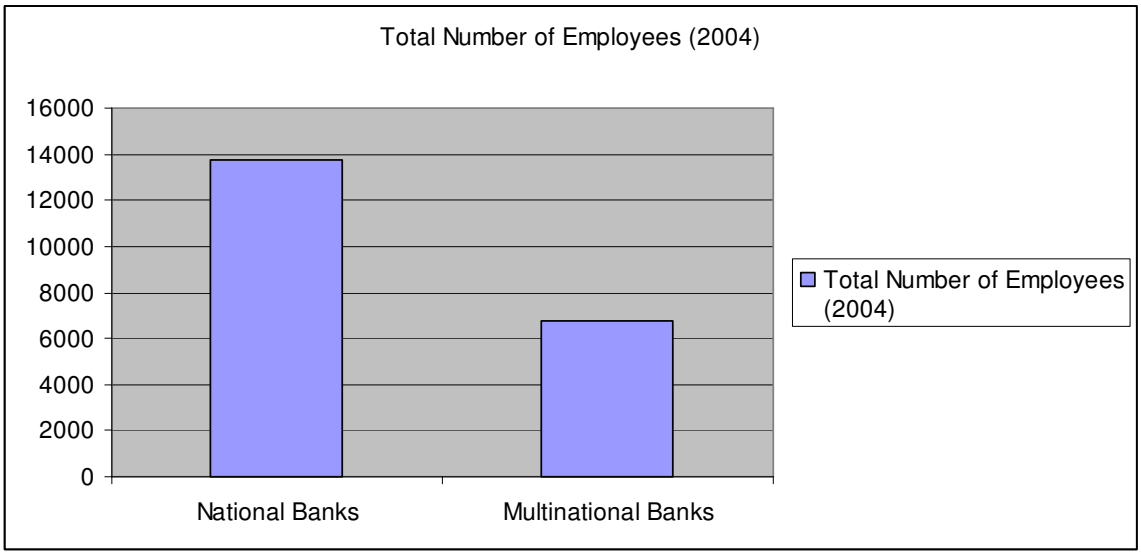

Figure 2-1 Total number of employees in national banks vs. multinational banks
Source: UAE Central Bank

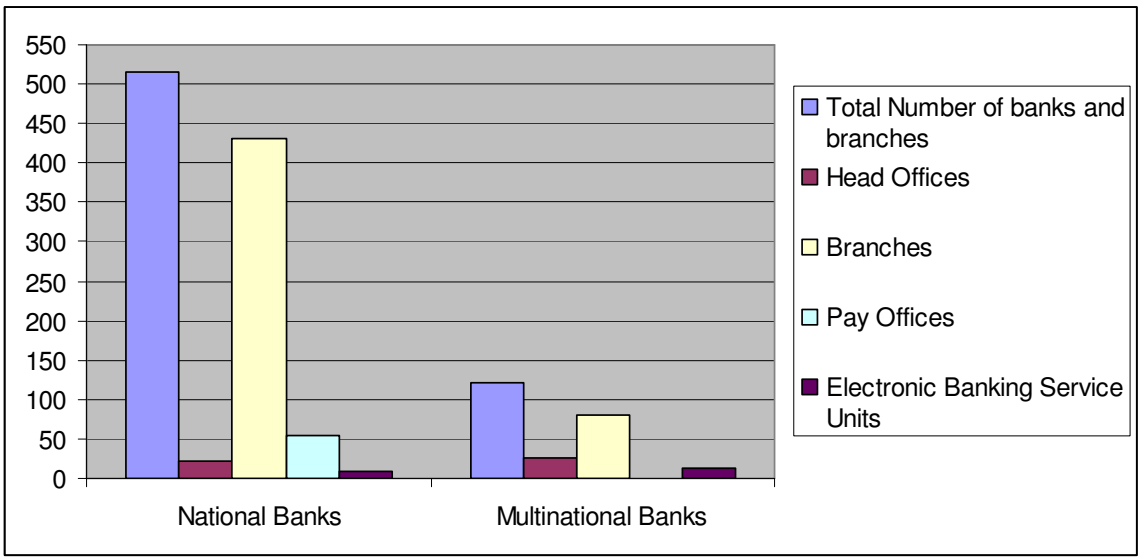

Figure 2-2 Total number of banks and branches in national banks vs. multinational banks
Source: UAE Central Bank

2.2 History of anti-money laundering (AML) in UAE banks

The UAE government has been aware of the possibility of banks and other financial institutions in the country being used for money laundering activities. Accordingly, the Central Bank of the UAE established a special unit for investigating fraud and suspicious transactions in July 1998, which was given the title "Anti-Money Laundering and Suspicious Cases Unit" (AMLSCU) in November 2000. The Unit has access to all relevant authorities in the UAE as well as those abroad, under the aegis of the National Anti-Money Laundering Committee. The promulgation of the Federal Law by the UAE authorities regarding the criminalization of money laundering took place on January 22, 2002. The law defines money-laundering as "any act involving transfer, conversion of deposit of property, or concealment or disguise of their true nature, knowing that such property is derived from any of the stated offences which include trade in narcotics, kidnapping, piracy or terrorism and offences in breach of international conventions to which the UAE is a signatory, the agency stated" [1], [12], [13].

The UAE government has taken significant steps towards restricting money laundering by inviting experts and representatives of international and regional bodies and regulatory and law enforcement agencies as well as bankers and money changers in Abu Dhabi in May, 2002. The UAE government is aware that money laundering can harmfully affect the economic wealth and the future of the economic development of the country [12], [13]. Moreover, UAE was one of the first countries who fought this problem through assigning and forcing various regulations and procedures [12], [13].

2.3 E-learning

Employers can use e-learning to advance the knowledge and skills of their employees. Employers can assess employees' learning needs, update content on a regular basis to fulfill those needs, track and recognize employees' learning and deliver it at work or at home through e-learning applications. One of the important features of e-learning is just-in-time learning, where employers can integrate individual learning with organizational needs and provide employees with the knowledge and skills they need when they need them. Employees don't have to take entire courses; instead, they can receive the modules of information and learning wherever they are [9].

E-learning is especially effective in linking learning with work. In addition, e-learning allows employers to build a learning component into their employees' work. Employers can customize the content design and to meet learning needs. With e-learning, customization may also be easier and faster, and the quality of the content and instruction may be improved, due to increased access to experts, multiple program choices and the availability of different learning delivery methods. In short, e-learning provides the opportunity for learning on the job what is needed, when it is needed [9].

Jean-Louis Michelet, Managing Director of international e-learning consultancy (ICUS) indicates that e-learning provides the right platform for organizations to increase awareness about anti-money laundering and compliance because of its consistency, cost efficiency and ease of delivery [14]. Dow chemical provides a recent example of the savings achieved through using e-learning in a largely compliance based training environment. The company saved $3.4 million in one year using e-learning technology

from “WBT Systems” to replace instructor-led training. [15]. Jon Walker, director of IT for Dow’s Human resources division, described Dow’s attempt in e-learning as “essential for a company like Dow where health and safety training is mandatory for employees.” [15]

Another firm, Liberty Group, is using e-learning to improve performance on the sales side. Liberty Group was able to improve revenues by 20 percent, partly because it was able to train its sales force on their own choosing prompting exam and testing rates to increase by 25 percent. Moreover, new sales representatives increased by 35 percent, because they were no longer spending significant amounts of time in classes, but were learning electronically while on the job. The results and reviews of e-learning across financial services and other industries have shown generally positive results [15].

2.4 E-learning in the banking sector

When a technology is new to a country or a region, the readiness of its people to adopt it is a crucial issue. The related measures also must capture readiness in terms of a country’s businesses, infrastructure and economy. The kinds of measurement that needs to be supported are primarily exploratory inquiry and preliminary assessment, as well as comparative analysis. As Figure 2-3 shows, in the U.S.A, for example, banking sector has the highest percentage of investment into e-learning technology [9].

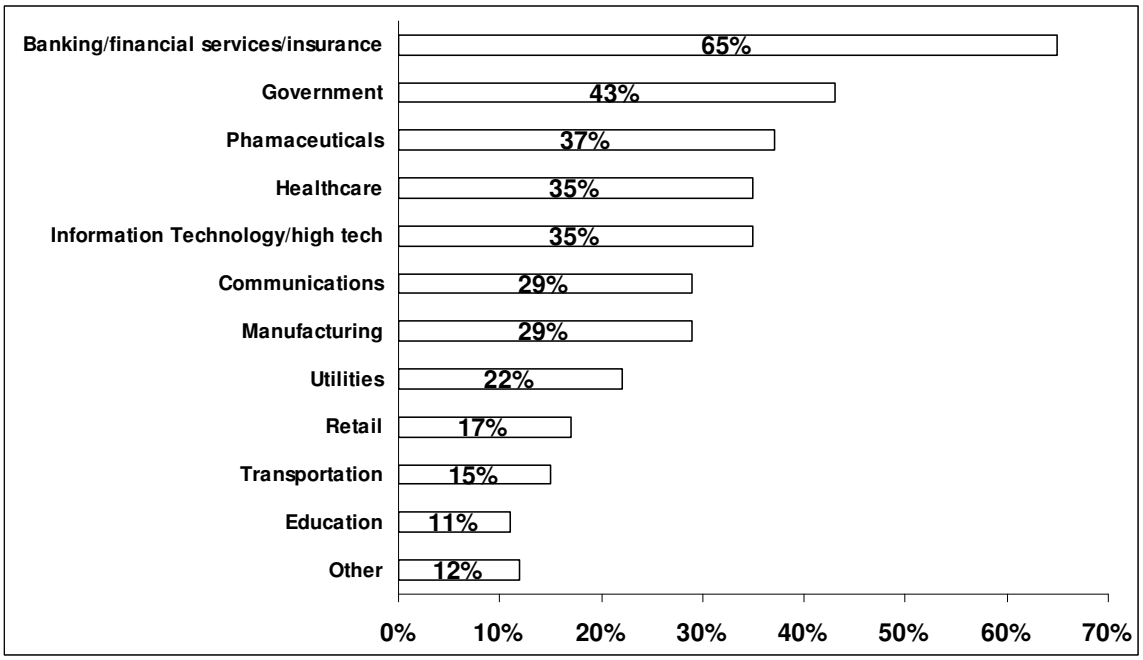

Figure 2-3 Percentage of investment in e-learning

Compliance is a crucial part of the yearend evaluation for all employees in the banking industry. People get evaluated not only by meeting financial goals, but also how well they execute their compliance responsibilities. Constant knowledge transfer in the banking sector is essential for making sure that compliance standards are well known and not forgotten with a need for additional training. Therefore, the compliance committee in the banks needs to ensure an ongoing training of the staff and the participation in relevant seminars, workshops and lectures in order to keep in mind the money laundering-fighting methods [16].

Banks must ensure that appropriate bank personnel are trained in all aspects of the compliance and anti-money laundering policies and procedures. All financial institutions, both banks and non-banks, are vulnerable to money laundering activities. However, banks have taken the lead in developing programs to prevent and detect money

laundering [16]. A Financial Sector Assessment Program (FSAP) was recently conducted in the UAE by visiting Financial Action Task Force and International Monetary Fund (IMF) teams that concluded the UAE had established an adequate anti-money laundering system [1]. According to the Governor of the Central Bank, the UAE is the first Arab country to establish a Financial Intelligence Unit (FIU) at the Central Bank and to join the Egmont Group of the world's financial intelligence units [1].

Many institutions are using e-learning to train employees who must deal with regulations and market conditions that differ from one country to another. For instance, Credit Suisse Financial Services is using "TopClass" to provide compliance training for 50,000 employees. As a global institution, Credit Suisse has legal difficulties to clear their reputation in a number of countries, and this creates a challenge in terms of training worldwide staff and ensuring they are compliant in the countries in which they are based and where they do business. The Swiss Federal Banking Commission, for example, has been increasing the amount of regulatory control and monitoring of the Swiss financial environment with anti-money laundering and client protection as key areas of concern [17].

There is an increasing tendency for blended solutions, combining e-learning and classroom training, highlighted by the global bank Barclays. The bank is reducing the classroom training over the next couple of years, where they have a split of 90% classroom and 10% e-learning. Hence, in less than five years, that number will be 40% classroom and 60% e-learning [17]. According to Nucleus Research, in 2005 the business technology displaying the highest Rate of Interest (ROI) was e-learning. Moreover,

Nucleus found that companies implementing e-learning solutions enjoy reduced travel, human resources, regulatory compliance and customer support costs, as wells as increased employee performance [2].

The regulators are also focusing on the role that technology can play in compliance and in law enforcement. Banks will have to employ or enhance anti-money laundering tools and technology to satisfy rising regulatory expectations. Banks compliance challenges have been increasing with new USA Patriot Act regulations [5]. Banks must understand the law and its impact on their business and take a risk based approach to compliance. In order for banks to get successful results in this battle, the critical success factors are consistent, comprehensive, and effective use of technology, and an anti-money laundering product [2].

One e-learning provider, Englewood Cliffs, N.J.-based Worknowledge for example, combines learning content, a technology platform, and consulting services into customized learning solutions. Its tools enable banks to align corporate training with corporate strategy by analyzing individual, department or company-wide performance [15].

A South African financial institution, Alexander Forbes, is using compliance-based e-learning software to help its staff navigate through regulated South African financial market. New regulations like the Financial Intelligence Center Act and the Financial Advisory Intermediary Services Act are forcing institutions in the land of Sun City to ensure that employees are continuously trained to avoid regulatory breaches. Alexander Forbes already had an extensive library of internal training materials, which is being

combined with “WBT's” and “TopClass” Compliance Modules. The institution is using “TopClass” as an e-learning portal to manage its entire training process from authorizing courses to registering all forms of learning including development, IT, sales, and legal and compliance issues [15].

2.5 The benefits of e-learning use in the banking industry

E-learning might be considered as a preferred methodology to train employees for a variety of reasons. First, e-learning leads to quicker, more accurate and consistent training from an anti-money laundering compliance viewpoint. Second, e-learning is considered as a managed approach that allows for continuous learning, which enables the staff to monitor and report suspicious transactions. Third, from a regulatory perspective, the audit trails of assessments prove to the regulator that effective training is being conducted. Finally, from a cost perspective; e-learning is a long-term solution for cost control if we consider the rising cost of training to achieve the anti- money laundering focus that regulators want [18].

Another benefit that banks can gain through e-learning tools is the ability to track the rate at which a user has been trained. Moreover, a major advantage of e-learning is individualization by accessing a virtual classroom, the employee can move away from the constraints of time and location [19].

Furthermore, e-learning has the following advantages for both the learner and the organization. For the learner, retention rates are 25-60% higher in an interactive online environment, especially for content such as combating money laundering, which has a variety of compliance issues [18]. Meanwhile, for the organization, e-learning is cost-

effective, since the money gets invested in education, and not in logistics. In addition, content is easily updated, and distributed, therefore keeping up with new laws and regulations more efficiently on a continuous basis [18]. For example organizations such as Commerce Bank have enjoyed similar success with their e-learning project, which like First Niagara's effort, revolves around teaching compliance procedures [2]. The project Commerce Bank has been effective with over a 95 percent success rate. "If we had to train 4,000 employees in a classroom setting, the cost, including travel and time away from their jobs, would be staggering." [2] Compliance training is the goal of yet another e-learning initiative, at Hypovereins bank (HVB). The bank, the second-largest in Germany, signed a one-year contract with GTF Systems, Danvers, Mass., to provide more than 500 employees in its New York office with emagine, GTF's e-learning management system [2].

Although implementing anti-money laundering solution can be a time consuming and costly process, the risk of noncompliance and regulatory violations should compensate the need for immediate investment returns on anti-money laundering technology. However, with the right strategy in place, financial markets firms can turn their anti-money laundering compliance systems into identification systems that may deliver benefits beyond anti-money laundering regulatory demands [16].

2.6 Research problem statement

This research establishes the status of e-learning in the UAE banks and identifies the specific impediments to diffusion of e-learning in the context of the UAE. More

specifically, this research is an explanatory study that explores the following research questions:

Q1: What are the characteristics that distinguish the national banks from the multinational banks in adopting the e-learning for anti-money laundering training?

Q2: What are the characteristics that significantly affect the banks who adopt e-learning from those who did not adopt e-learning for anti-money laundering training?

2.7 Research scope and objectives

The research focuses on determining the extent to which banks in UAE are using e-learning to address the regulatory compliance issues of anti-money laundering, and identifying the areas in which e-learning might help in achieving the compliance level. Specifically, this research examines how e-learning for anti-money laundering get diffused into banks in the UAE. Factors that affect the adoption of the e-learning innovation are examined. Finally, a framework of attributes that affect the adoption of e-learning innovation in this context is introduced.

2.8 Significance of the Results

This research applies existing theories of innovation diffusion to the management of actual e-learning implementation for anti-money laundering (AML) among banks in UAE. In specifics, the contributions of the thesis are:

1. Develop a complete model for studying diffusion of e-learning for anti-money laundering training in the banking industry that includes factors from multiple perspectives.
2. Apply the model for anti-money laundering training in UAE banks and formulating its characteristics.

2.9 Summary of Chapter

This chapter reviews the nature of the banking industry in the UAE, history of anti-money laundering (AML) in UAE banks, and relationship between e-learning and anti-money laundering (AML). Further, this chapter highlights the research problem statement, research objectives and significance of the results.

Chapter 3

Model Development

The purpose of this chapter is to introduce the theoretical background that helped in developing the research model and to examine the factors that affect the adoption and diffusion of e-learning into organizations. This chapter presents the theoretical framework and a model for the diffusion and adoption of e-learning.

3.1 Theoretical Background

The diffusion of innovations (DOI) has been the basis of a wide-ranging body of research within the fields of information technology and information systems [20]. DOI was first introduced by Everett Rogers in 1962. Rogers defines an innovation as "an idea, practice, or object that is perceived as new by an individual…" [21] Everett Rogers describes diffusion as *'the process by which an innovation is communicated through certain channels over time among the members of a social system'* [22]. The process of diffusion is considered to revolve around four key elements: an idea or innovation, channels of communication to spread knowledge of the innovation, time during which diffusion takes place, and a social system of potential adopters in which this occurs [22].

Rogers defines five innovation attributes that are typically identified as being important for rapid diffusion [22]:

- ***Relative Advantage:*** the degree to which the innovation is perceived to have significant advantages over current alternatives. For example, the benefit perceived by banks in adopting e-learning to conduct business as measured by lower business cost or wider market coverage.

- ***Compatibility:*** the degree to which the innovation is seen as being consistent with past practices, current values and existing needs. For example, how well banks think the new innovation (i.e., e-learning) will fit into their existing business process.
- ***Complexity:*** the degree to which the innovation can readily be understood and easily implemented. For example, what is the perceived difficulty of banks in adopting e-learning?
- ***Trialability:*** the degree to which new ideas that can be tried out at low costs before adoption are more likely to be taken up. For example, e-learning is more trialable if business conversion can be carried out in phases and if grant is provided to cover high start-up costs.
- ***Observability:*** the degree to which the use and benefits of the innovation are visible to others, and therefore act as a further stimulus to uptake by others. For example, the bank's ability to see beneficial results of using e-learning by other businesses.

Rogers' innovation–decision process provides a basic model for change. It consists of five steps that typically occur in sequential order. This process involves gaining awareness of the innovation, forming either a positive or a negative opinion about the innovation, choosing to adopt or reject the innovation, using the innovation, and seeking evidence that supports the decision to adopt or reject the innovation [22].

Along with specific strategies and models for change, researchers have looked at the variables that influence the success or failure of implementing an innovation within an organization. Bishop, Clark and Grant recommend a "top-down" implementation when

introducing computer technology in education. Top-down refers to "the involvement of powerbrokers who provide a plan that includes needed resources, support, as well as follow up to ensure the technology is being used correctly" [23]. Dhanarajan found the lack of existing infrastructure (i.e., resources), lack of commitment from powerbrokers, low level of skills, and the need to train intended users influenced implementation [24]. Dalton emphasized the importance of training for the adoption and diffusion of computers in schools [25]. Herson, Sasabowski, LIoyd, Flowers, Paine, & Newton listed knowledge and skills of users, involvement of the intended users in the development of the product, and a perceived need to change old methods as factors that influenced implementation [26]. Jost and Schneberger used information system models as a basis for implementing educational technology [27]. Using this strategy they determined that support from upper level management in the form of "funding", "job redesign," "rewards and incentives," "operational support" and "training" was essential, along with gaining information from intended users when designing the innovation [28].

On the other hand, Rose identified four groups of barriers that impact implementation of educational technologies [28]. Ebersole and Vornddam list numerous variables affecting implementation including insufficient time, insufficient resources, lack of leadership, and lack of skills and knowledge [29]. Pajo and Wallace reduced barriers to web based technology in higher education into three [30]. The first factor, labeled "personal variables," includes variables related to inadequate time, inadequate skills, and access to training [28]. The second factor, "attitudinal barriers," includes variables related to the general perception and feelings about the innovation [28]. The final factor,

"organizational barriers," includes variables related to hardware, software, and technical support [28].

Stockdill and Moreshouse [28] identified five factors (i.e. "educational need," "user characteristics," "content characteristics," "technological considerations," and "organizational capcity" p. 57). The factor, "organizational capacity," refers to the variables within the organization that influence the adoption of an innovation. These include "staff," "linkages," "equipment," "expertise," "rewards," and the "attitudes and values of the individuals" (p.57) [28].

Different theories have been formulated to examine the adoption and diffusion of IT innovations. For example, IT innovation research has investigated a large number of theories, including Innovation Diffusion Theory, Innovation Diffusion Theory for organizations, Technology Acceptance Model (TAM), Theory of Planned Behavior, Perceived Characteristics of Innovating, Unified Theory of Acceptance and Use of Technology, and Diffusion/Implementation Model [20]. Using these theories, several innovations have been examined, such as electronic data interchange, telecommunications technologies, database management systems, smart-card payment systems, and computer-aided software engineering tools [31].

Moreover, these theories propose different variables, such as innovation characteristics, organizational characteristics, and environmental characteristics. Innovation characteristics include Relative Advantage, Complexity, Compatibility, Observability, and Trialability. Organizational characteristics include Top Management Support, Championship, Organization Structure, Centralization and Formalization,

Internal Influence and External Influence, Organization Size, and Organization Slack [20]. Environmental characteristics include External Pressure, Competition, and Coercive Influence [31].

From diffusion theory, technology characteristics are an important factor influencing e-learning adoption. Tornatzky and Klein [32] found that innovation characteristics have a relationship to innovation adoption. Generally, users are more likely to use technology that has a high relative advantage to them in performing their job. On the other hand, if technology cannot provide advantages to users, they will be hesitant to use it. As a result, the relative advantage attributes have an influence on users' perception of technology [32].

In addition, Ramamurthy [33] also found that compatibility has a positive influence on organizational IT/ICT adoption and implementation. Other technology attributes are speed, reliability and accessibility. Speed makes users improve their productivity by using IT/ICT technology compared with manual or previous systems. However, if users feel that these applications lack speed and reliability, they may not be willing to use them. Further, users might not be provided with the necessary access to use an ICT application due to resource limitations which might be a barrier to their ICT use [33].

The IT/ICT diffusion process can be seen as a process of a change within an organization, so we need commitment from both users' and their organization [33]. An organization's top management also needs to be committed to support and allocate adequate resources for technology investment [33].

3.2 Research Model

To explore the essential factors that influence e-learning diffusion with UAE banks, figure 3-1 demonstrates the model that was constructed based on the theories discussed above to be the base of this research.

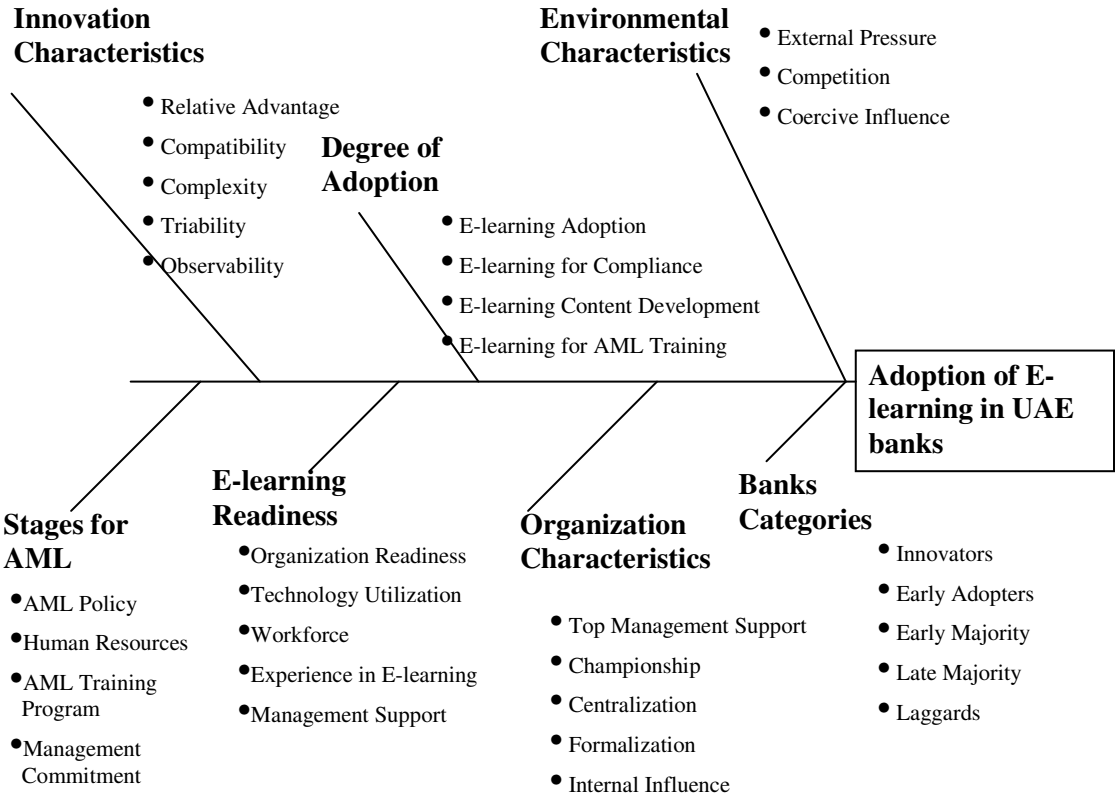

Figure 3-1 Research Model

This model helps to improve the understanding of e-learning diffusion in UAE banks. The model consists of seven main entities, namely innovation characteristics, organization characteristics, environmental characteristics, e-learning readiness, stages for anti-money laundering, banks categories and degree of adoption.

3.2.1 Innovation Characteristics

The first entity, innovation characteristics includes the following variables: Relative Advantage, Compatibility, Complexity, Triability and Observability. This entity is mainly used to examine the innovation characteristics that will affect the adoption of e-learning for AML training. Relative Advantage is the degree to which the innovation is perceived to have significant advantages over existing alternatives. So, e-learning is more effective when compared to other forms of education/training in addressing the regulatory compliance issues of anti-money laundering. This variable examines whether e-learning for anti-money laundering training improves the quality of training when compared with traditional training methods. Moreover, Relative Advantage checks if e-learning for anti-money laundering training is more convenient than the traditional training methods because of 24x7 availability. In addition, this variable test if e-learning for anti-money laundering training is cheaper than traditional training or education. Furthermore, Relative Advantage assess if e-learning for anti-money laundering is better received by bank's employees than the traditional training or education methods.

Compatibility is the degree to which the innovation is seen as being consistent with past practices, current values and existing needs. This variable tests if using e-learning for anti money laundering training is consistent with the bank's existing values and whether using e-learning for anti-money laundering training satisfies bank's current training needs. Also compatibility checks if using e-learning for anti-money laundering training is consistent with bank's past experiences with use of Information Technology and whether using e-learning for anti-money laundering training will fill specific needs of employees who need training on anti-money laundering compliance. Further, this variable examines

whether using e-learning for anti-money laundering training fits well with the existing work practices of bank's employees and if using blended learning involved both traditional and e-learning for anti-money laundering training will be preferred by bank's employees over use of traditional training methods alone.

The third variable in the innovation characteristics is Complexity which is the degree to which the innovation can readily be understood and easily implemented. This variable examines whether implementing e-learning to accomplish anti-money laundering compliance training is easy, whether using e-learning makes it easier for the bank to fulfill the anti-money laundering training compliance. In addition, Complexity tests if it is clear how e-learning can be used to conduct anti-money laundering training and if it is easy for bank employees to learn how to use e-learning for anti money laundering training and compliance.

Trialability is the degree to which new ideas that can be tried out at low costs before adoption are more likely to be taken up. This variable looks if it is easy for the bank to try various e-learning applications for anti-money laundering training before making a commitment to buying or implementing. Additionally, Triability assess if the bank employees find it easy to use e-learning for anti-money laundering training and if rolling out a training program based on e-learning takes very little time.

The last variable in the innovation characteristics is Observability which is the degree to which the use and benefits of the innovation are visible to others. For example, the bank's ability to see beneficial results of using e-learning by other businesses. Observability examines if the bank's management has learned new ways of using e-learning for anti-money laundering training from competitive banks, if bank's

management believes that using e-learning for anti-money laundering training may increase its social prestige and if employing e-learning for anti-money laundering training will improve an employee's or a manager's image within the bank. In addition, this variable figures out if people who use e-learning for anti-money laundering training have a high profile in the bank, if the use of e-learning for anti-money laundering is visible to everyone in the bank and if the use of e-learning for anti-money laundering is visible to others outside the bank.

3.2.2 Organization Characteristics

Organization characteristics are the variables that consider organizational level issues for adoption such as Top Management Support, Championship, Centralization, Formalization, Internal Influence, External Influence and Organization Slack. Top Management Support examines if the senior management pressure is one of the key reasons for adoption of new IT innovations in the bank and whether top management has a positive attitude towards using IT in general and use of e-learning in specific. Also this variable explores if top and mid-level management thinks positively toward IT interventions in daily or routine tasks and if top management in the bank actively participates in establishing a vision and formulating strategies for utilizing IT systems and if the immediate supervisor encourages the staff to learn about and/or apply new IT technologies.

The Championship variable investigates whether there is a well-placed champion who facilitates the acceptance and implementation of IT initiatives (e.g., introduction of e-learning for anti-money laundry training) in the bank and whether top management in the

bank typically assigns project champions (focal point) for overseeing the utilization of IT in the bank.

Centralization is defines as the degree to which power and control in a system are concentrated in the organization. So, this variable test if the bank's training needs and delivery solutions (including those for e-learning) are centrally planned. The forth organization characteristic is formalization which is the degree to which the organization emphasizes that its members should follow rules and procedures. Formalization investigates if the anti-money laundering compliance officer or equivalent role has the authority to chose and select different training models for anti-money laundering and if the bank has a long process for making decisions about adoption of a technological intervention such as the use of e-learning for anti-money laundering training.

Internal Influence looks if the bank has a culture and tradition of using IT whenever appropriate. However, External Influence checks if the bank feels that it will be left behind if it does not adopt technologies such as e-learning and if employees typically have the free time to attend workshops and other traditional training events. In addition, Organization Slack tests if the bank has enough resource to invest in a long-term e-learning platform to handle the anti-money laundering compliance training.

3.2.3 Environmental Characteristics

The third entity which is the environmental characteristics measures the following variables: External Pressure, Competition and Coercive Influence. External Pressure variable tests if there is pressure from banking industry to use technology to address anti-money laundering compliance and if the employees feel pressured by their colleagues and peers to be effective in using IT technology in establishing anti-money laundering

compliance in the bank. Competition tackles if not using e-Learning for anti-money laundering training may have an impact on our bank's competitive edge. Coercive Influence checks if the bank is under pressure from the government and the international compliance agencies to implement anti-money laundering training efficiently and in a timely manner.

3.2.4 Banks categories

The banks categories entity identifies the banks into five categories: Innovators, Early Adopters, Early Majority, Late Majority and Laggards. Innovators are the first to adopt a new idea; they are able to deal with a higher degree of uncertainty than the other adopter categories. They also have the ability to understand and apply complex technical knowledge. Specifically, the Innovators category tests if the bank's management is passionate with trying new IT Technologies, tests if bank's management is innovative and eager to be the first to adopt new IT technologies and if bank's management actively seeks out new IT innovations.

Early Adopters serve as leaders for individuals to obtain advice and instruction before adopting a new idea. In specific, this category measures whether the bank's management often uses other banks' experience of innovative uses of IT technology to gain more information and to make decisions and if the bank's management often adopts new IT innovations and influences other banks to do so as well.

The Early Majority are usually the followers in adopting innovations. This category investigates if the bank's management is willing to adopt new IT technology but is not willing to be a leader in the change process among other banks. Early Majority category tests if the bank's management is willing to follow the lead of other banks in adopting

new IT innovations and if the bank's management is generally willing to adopt new IT technology but does not attempt to influence other banks to do so.

Late Majority are doubter and do not adopt new ideas until the majority of the members in the social system have done so. This category measures if the bank's management is generally cautious about introducing new IT technology in the bank and if bank's management is generally convinced of the advantage of using IT technology based on successful use by other banks. Laggards are the last individuals to adopt an innovation. They should make sure that a new idea will be successful before they will adopt. Specifically, this category checks if the bank's management typically show resistance towards adoption of new IT technology or training program until they are sure that it will be successful, if the management in the bank is suspicious of using new IT technologies and if the bank's management is generally resistant to change.

3.2.5 E-learning Readiness

E-learning Readiness entity measures the readiness of the organization in terms of technology readiness, resources, cost and management. In particular, this variable checks how well is the bank using (Internet and Intranet) technology to run its business, how prepared (skills, knowledge, motivation) is the workforce to compete and win in the high-tech and new economy and how the bank does define "e-Learning?" (i.e.: traditional computer Based Training, knowledge management, performance support and other web-enabled distance learning approaches). Moreover, E-learning Readiness checks how will the bank overcomes any bad prior experiences you and others have had with technology based learning? (i.e.: blamed for past disappointments, experiences as lessons learned and we try to improve over time.). Also, this variable examines how much access do people

have to the web (anyone, any time, anywhere), whether the management differentiate between instructional needs (training) and informational needs (knowledge management), and does the management make the right decisions about when to use each. Also, E-learning Readiness tests what is the level of the bank's expertise in instructional and information design (pretty weak, growing, strong), is the bank ready to move beyond a predominant reliance on classroom training to a more balanced approach with e-Learning, does senior management support e-Learning and does the bank have a change management plan for introducing e-Learning. Further, E-learning Readiness asks whether the bank can demonstrate the business benefits of e-Learning, does the bank have a plan to help the training function reinvent itself for the digital age and what is the climate in the bank to learning in alternative locations, especially the work site. In addition, this variable tests if the bank is willing to allow e-Learning to thrive, perhaps at the expense of some of the more traditional parts of the training organization and how prepared is the bank to invest in e-learning, and incubate e-Learning for several years in order to get it firmly established (i.e.: is their a budgeting process). E-learning Readiness explores how prepared is the bank to deal with a large and increasingly complex e-Learning marketplace, does the bank has a good handle on what it is buying in the e-Learning marketplace – can it differentiate quality products and weed out redundancies, and finally is the bank prepared to outsource its training functions and manage them externally so that it can concentrate its resources on more valuable areas.

3.2.6 Stages for anti-money laundering

The stages for anti-money laundering entity measure the application of AML in the banks. This variable checks if the bank requires reporting any suspicious client activities

to the regulatory authority immediately and whether the bank has a written policy designed to combat money laundering. Also, this entity examines if the bank's written policy specifies internal controls (e.g.: inspection or investigation) and procedures such as Know Your Customer (KYC), operations analysis and suspicious activity report (SAR) and if the bank has an employee training program for the prevention of money laundering. Further, Stages for AML asks if the bank has a Money Laundering Reporting Officer (or similar role) responsible for coordinating and monitoring anti-money laundering arrangements and whether the bank enforces a mandatory anti-money laundering training program for all management and staff carried out on a regular basis. Additionally, this variable explores if the bank has an established process to periodically test the adequacy of AML procedures and policies, whether the bank monitors and reports suspicious transactions in accordance with applicable regulations and if the bank monitors transactions and accounts in the name of suspected terrorists and/or terrorist organizations and reports them to the competent authorities. Moreover, Stages for AML checks if the bank has implemented an independent testing program that is designed to assess the bank's compliance with international anti-money laundering and anti-terrorist financing policies and procedures and relevant laws regulations. Also, this variable tests if the bank's board and senior management consider AML to be a high priority and do they actively demonstrate their commitment to the bank's AML effort and if the bank is confident that their suspicious activity report (SAR) processes are appropriate for the scale of internal and external reporting that are now in place. Additionally, Stages for AML variable examines whether the bank regularly assesses the quality, impact, and effectiveness of AML training for staff and if all of the staff is trained in anti-money

laundering compliance. Finally, this variable checks if the bank provides tailored training for specific groups in the bank (as opposed, to generic information for all) and whether the bank's senior management has undertaken the AML training alongside other staff members, and if the bank periodically updates the content of its AML training.

3.2.7 Degree of Adoption

Finally, Degree of Adoption entity examines whether the organization in ready to adopt a technology innovation or not. Specifically, this variable identifies if the bank uses e-learning and in which year they started using it. In addition, the Degree of adoption variable checks if the bank develops most of the e-learning content internally (as opposed to buying off-the-shelf) and whether the bank outsource the development of customized e-learning content. Moreover, this variable test if the bank's Learning Management System is tied to the Human Resource Management System to allow managers to track courses being taken by their employees and whether the bank is aware that e-learning has been used extensively to deliver anti-money laundering compliance training in the banking sector. Also, Degree of Adoption variable asks if the bank would like to explore the use of e-learning to deliver anti-money laundering compliance training, if the bank has experimented with using e-learning to deliver anti-money laundering compliance training, and if the e-learning system allows a manager or compliance manager to track the amount of anti-money laundering training taken by each bank employee.

3.3 Summary of Chapter

This chapter provides the theoretical background and research model that helped in developing the research model. The following factors were determined to be integrated in the survey design: innovation characteristics, organization characteristics, environmental

characteristics, e-learning readiness, banks categories, degree of adoption, and stages for AML.

Chapter 4

Research method and design

This research uses a qualitative research approach through a questionnaire to conduct the investigation based on the model presented in the earlier chapter. This chapter highlights the steps that were used to design and conduct the survey. Specifically, the survey examines various factors affecting the adoption and utilization of e-learning for anti-money laundering in banks in the UAE.

4.1 Survey design and validation

Based on the model discussed in the previous chapter, a research question survey was designed (see Appendix A). The survey tackled the following issues: the bank's general use of e-learning, the current level of involvement in e-learning, the level of compliance for anti-money laundering and bank's readiness to the introduction of e-learning. A pilot test was run first, where a small focus group from three banks was picked and the first draft of the survey was sent to each member of the group. The purpose of this step was to get their feedback on the type of questions and whether they are relevant to the banking sector or not. The survey was judged to be reliable (Kendall's Coefficient of Concordance is 0.915 and p-value<0.005).

Table 4-1 shows the primary constructs considered in the survey. Most items or variables in the survey were formed as a five point Likert scale ranging from “strongly disagree” to “strongly agree”. An overall weighted average was made for each construct.

Table 4-1 Structure of the Survey

Constructs / Variables	# Questions	Source
E-Learning Adoption	12	Moore and Benbasat (1991) [31], Rogers, DOI (1995) [22]
Banks Categories Innovators Early adopters Early majority Late majority Laggards	13 3 2 3 2 3	Rogers, DOI (1995) [22]
Innovation Characteristics Relative Advantage Compatibility Complexity Triability Observability	24 5 6 4 3 6	Rogers, DOI (1995) [22]
Organizational Characteristics Top Management Support Championship Centralization Formalization Internal Influence External Influence Organization Slack	14 5 2 1 2 1 2 1	Rai, Howard, Lai and Guynes (1994) [34], Grover (1993) [35,36], Loh and Venkatraman (1992) [37], Teng (2002) [38]
Environmental Characteristics External Pressure Competition Coercive influence	4 2 1 1	Iacovou (1995) [39], Grover (1993) [35,36], Neo (1994) [40]
E-Learning Readiness	20	The E-Learning Readiness Survey (2000), Marc J. Rosenberg, P.h.D [41]
Stages for AML Program	16	Global AML Survey (2004), KPMG [3]
Total	103	

4.1.1 E-learning Adoption Construct

E-learning Adoption questions asked the respondents whether their organizations used e-learning or not and in which year they started using this innovation. Also they were asked whether they used or planning to use e-learning for AML training and in which

year [22], [31]. Moreover, this construct covered the following items on a five point likert scale (1=strongly disagree and 5=strongly agree):

1. The bank develop most of the e-learning content internally (as opposed to buying off-the-shelf)
2. The bank outsource the development of customized e-learning content
3. The bank's Learning Management System is tied to the Human Resource Management System to allow managers to track courses being taken by their employees
4. The bank is aware that e-learning has been used extensively to deliver anti-money laundering compliance training in the banking sector
5. The bank is intrigued and would like to explore the use of e-learning to deliver anti-money laundering compliance training
6. The bank has experimented with using e-learning to deliver anti-money laundering compliance training
7. The e-learning system allows a manager or compliance manager to track the amount of anti-money laundering training taken by each bank employee

Also, this variable asks the respondent if the bank is using e-learning and in which year did the bank starts using it. Further, this variable asks if the bank decided to adopt e-learning for AML training after evaluating e-learning innovation and in which year they are planning to do so. Moreover, E-learning Adoption asks the respondents whether the bank does not use a learning management system, or the bank uses an internally installed learning management system, or the bank hosts a learning management system.

4.1.2 Banks Categories

In addition, this construct classifies the banks into the five categories [22], the following questions were asked on a five points likert scale (1=strongly disagree and 5=strongly agree):

- Innovators are the first to adopt a new idea; they are able to deal with a higher degree of uncertainty than the other adopter categories. They also have the ability to understand and apply complex technical knowledge. The following questions were used to determine this variable:

1. Bank's management is passionate with trying new IT Technologies.
2. Bank's management is innovative and eager to be the first to adopt new IT technologies.
3. Bank's management actively seeks out new IT innovations.

- Early Adopters serve as leaders for individuals to obtain advice and instruction before adopting a new idea. The following questions were used to determine this variable:

1. Bank's management often uses other banks' experience of innovative uses of IT technology to gain more information and to make decisions.
2. Bank's management often adopts new IT innovations and influences other banks to do so as well.

- Early Majority are usually the followers in adopting innovations. The following questions were used to determine this variable:

1. Bank's management is willing to adopt new IT technology but is not willing to be a leader in the change process among other banks.

2. Bank's management is willing to follow the lead of other banks in adopting new IT innovations.
3. Bank's management is generally willing to adopt new IT technology but does not attempt to influence other banks to do so.

- Late Majority is doubter and do not adopt new ideas until the majority of the members in the social system have done so. The following questions were used to determine this variable:

1. Bank's management is generally cautious about introducing new IT technology in the bank.
2. Bank's management is generally convinced of the advantage of using IT technology based on successful use by other banks.

- Laggards are the last individuals to adopt an innovation. They should make sure that a new idea will be successful before they will adopt. The following questions were used to determine this variable:

1. Bank's management typically show resistance towards adoption of new IT technology or training program until they are sure that it will be successful.
2. The management in the bank is suspicious of using new IT technologies.
3. Bank's management is generally resistant to change.

4.1.3 Innovation Characteristics Construct

Innovation characteristics were measured according to the following variables on a five point likert scale (1=strongly disagree and 5=strongly agree):

- Relative Advantage is the degree to which the innovation is perceived to have significant advantages over existing alternatives. The following questions were used to determine this variable:

1. E-learning is more effective when compared to other forms of education/training in addressing the regulatory compliance issues of anti-money laundering.
2. E-learning for anti-money laundering training improves the quality of training when compared with traditional training methods.
3. E-learning for anti-money laundering training is more convenient than the traditional training methods because of 24x7 availability.
4. E-learning for anti-money laundering training is cheaper than traditional training/education.
5. E-learning for anti-money laundering is better received by Bank's employees than the traditional training/education.

- Compatibility is the degree to which the innovation is seen as being consistent with past practices, current values and existing needs. The following questions were used to determine this variable:

1. Using e-learning for anti money laundering training is consistent with the bank's existing values.
2. Using e-learning for anti-money laundering training satisfies bank's current training needs.
3. Using e-learning for anti-money laundering training is consistent with bank's past experiences with use of Information Technology.

4. Using e-learning for anti-money laundering training will fill specific needs of employees who need training on anti-money laundering compliance.
5. Using e-learning for anti-money laundering training fits well with the existing work practices of bank's employees.
6. Using blended learning involved both traditional and e-learning for anti-money laundering training will be preferred by bank's employees over use of traditional training methods alone.

- Complexity is the degree to which the innovation can readily be understood and easily implemented. The following questions were used to determine this variable:

1. Implementing e-learning to accomplish anti-money laundering compliance training is easy.
2. Using e-learning makes it easier for the bank to fulfill the anti-money laundering training compliance.
3. It is fairly clear how e-learning can be used to conduct anti-money laundering training.
4. It is easy for bank employees to learn how to use e-learning for anti money laundering training and compliance.

- Triability is the degree to which new ideas that can be tried out at low costs before adoption are more likely to be taken up. The following questions were used to determine this variable:

1. It is easy for the bank to try various e-learning applications for anti-money laundering training before making a commitment to buying or implementing.

2. The bank employees find it easy to use e-learning for anti-money laundering training.
3. Rolling out a training program based on e-learning takes very little time.

- Observability is the degree to which the use and benefits of the innovation are visible to others. The following questions were used to determine this variable:

1. Bank's management has learned new ways of using e-learning for anti-money laundering training from competitive banks.
2. Bank's management believes that using e-learning for anti-money laundering training may increase its social prestige.
3. Employing e-learning for anti-money laundering training will improve an employee's or a manager's image within the bank.
4. People who use e-learning for anti-money laundering training have a high profile in the bank.
5. The use of e-learning for anti-money laundering is visible to everyone in the bank.
6. The use of e-learning for anti-money laundering is visible to others outside the bank.

4.1.4 Organization Characteristics Construct

Organization characteristics were measured according to the following variables on a five point likert scale (1=strongly disagree and 5=strongly agree).

- Top management support is where the innovation gets and maintains the support from different levels of management in the organization. The following questions were used to determine this variable:

1. Senior management pressure is one of the key reasons for adoption of new IT innovations in our bank.
2. Top Management has a positive attitude towards using information technology in general and use of e-learning in specific.
3. Top and mid level management thinks positively toward information technology interventions in daily/routine tasks.
4. Top management in the bank actively participates in establishing a vision and formulating strategies for utilizing information technology systems.
5. My immediate supervisor encourages me to learn about and/or apply new IT technologies.

- Championship is whether the management has identified a key person to hold the responsibility and be a focal point for the innovation. The following questions were used to determine this variable:

1. There is a well-placed champion who facilitates the acceptance and implementation of information technology initiatives (e.g., introduction of e-learning for anti-money laundry training) in the bank.
2. Top management in the bank typically assigns project champions (focal point) for overseeing the utilization of information technology in the bank.

- Centralization is defines as the degree to which power and control in a system are concentrated in the organization. The following questions were used to determine this variable:

1. The bank's training needs and delivery solutions (including those for e-learning) are centrally planned.

- Formalization, the following questions were used to determine this variable:

1. The anti-money laundering compliance officer (or equivalent role) has the authority to chose and select different training modalities for anti-money laundering.
2. Our bank has a long bureaucratic process for making decisions about adoption of a technological intervention such as the use of e-learning for anti-money laundering training.

- Internal influence, the following questions were used to determine this variable:

1. Our bank has a culture and tradition of using information technology whenever appropriate.

- External influence, the following questions were used to determine this variable:

1. Our bank feels that it will be left behind if it does not adopt technologies such as e-learning.
2. Our employees typically have the free time to attend workshops and other traditional training events.

- Organization slack, the following questions were used to determine this variable:

1. Our bank has enough resource to invest in a long-term e-learning platform to handle the anti-money laundering compliance training.

4.1.5 Environmental Characteristics Construct

Environmental characteristics were measured according to the following variables on a five point likert scale (1=strongly disagree and 5=strongly agree):

- External Pressure, the following questions were used to determine this variable:

1. There is pressure from our industry to use technology to address anti-money laundering compliance.
2. I feel pressured by my colleagues and peers to be effective in using IT technology in establishing anti-money laundering compliance in the bank.

- Competition, the following questions were used to determine this variable:

1. Not using e-Learning for anti-money laundering training may have an impact on our bank's competitive edge.

- Coercive Influence, the following questions were used to determine this variable:

1. The bank is under pressure from the government and the international compliance agencies to implement anti-money laundering training efficiently and in a timely manner.

4.1.6 E-learning Readiness Construct

E-learning Readiness was measured according to the following questions based on a six point likert scale (0=Low importance, 5=High importance) [41]:

1. How well is the bank using (Internet and Intranet) technology to run its business?
2. How prepared (skills, knowledge, motivation) is your workforce to compete and win in the high-tech, new economy?
3. How the bank does define "e-Learning?" (i.e.: traditional computer Based Training, knowledge management, performance support and other web-enabled distance learning approaches)
4. How will the bank overcomes any bad prior experiences you and others have had with technology based learning? (i.e.: blamed for past disappointments, experiences as lessons learned and we try to improve over time.)

5. How much access do people have to the web (anyone, any time, anywhere)?
6. Do you differentiate between instructional needs (training) and informational needs (knowledge management), and do you make the right decisions about when to use each?
7. What is the level of the bank's expertise in instructional and information design? (pretty weak, growing, strong)
8. Is the bank ready to move beyond a predominant reliance on classroom training to a more balanced approach with e-Learning?
9. Does senior management support e-Learning?
10. Does the bank have a change management plan for introducing e-Learning?
11. Can the bank demonstrate the business benefits of e-Learning?
12. Does the bank have a plan to help the training function reinvent itself for the digital age?
13. What is the climate in the bank to learning in alternative locations, especially the work site?
14. Is the bank willing to allow e-Learning to thrive, perhaps at the expense of some of the more traditional parts of the training organization?
15. How prepared is the bank to invest in, and incubate e-Learning for several years in order to get it firmly established? (i.e.: is their a budgeting process)
16. How prepared is the bank to deal with a large and increasingly complex e-Learning marketplace?
17. Does the bank has a good handle on what it is buying in the e-Learning marketplace – can it differentiate quality products and weed out redundancies?

18. Is the bank prepared to outsource its training functions and manage them externally so that it can concentrate its resources on more valuable areas?
19. How committed are you, personally, to e-Learning? Are you ready?

4.2 Conducting the survey

The research question survey was conducted among leading banks operating in the UAE (about 47 banks according to UAE Central Bank). The survey was send to all banks via e-mail, post and courier. Responses were stored in a database for subsequent analysis.

The final survey return rate for the study was 25 out of 47 (53%) surveys returned and 10 banks (21.3%) refused to answer the survey. Figure 4-1 illustrates the respondent's role in the bank. 44% (11) of the respondents were compliance officers, 24% (6) were managers, 16% (4) were senior executives, 12% (3) were training managers, and 4% (1) were HR managers.

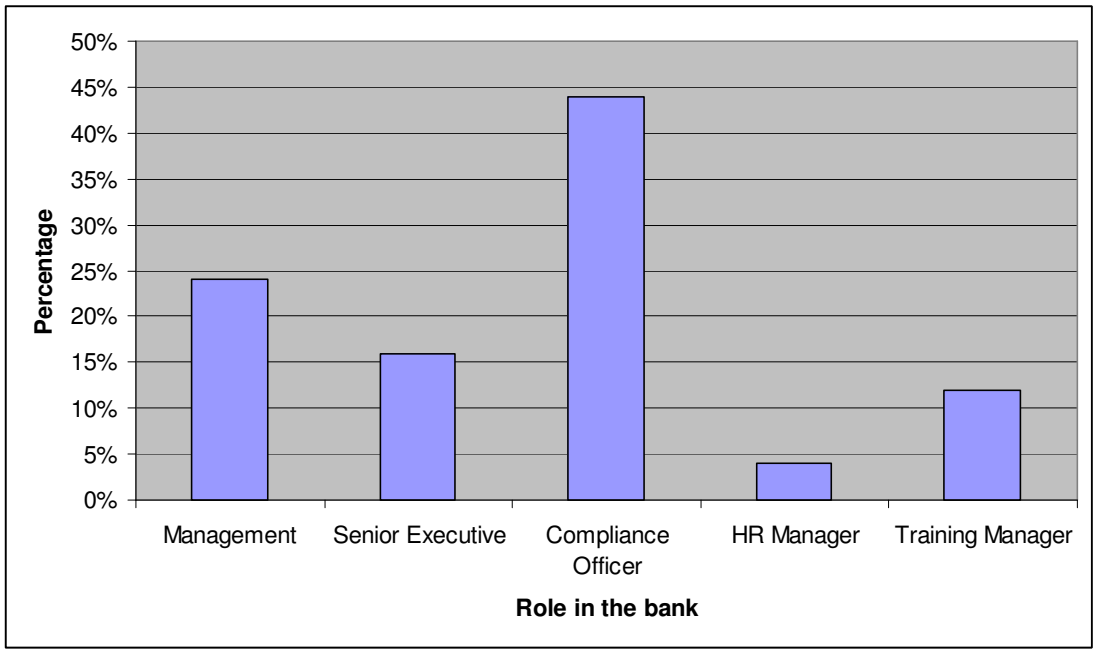

Figure 4-1 Respondent's role in the bank

Figure 4-2 illustrates the total number of years the respondents had worked in the bank. 32% (8) of the respondents had worked for greater than 15 years, 32% (8) had worked for 1-5 years, 20% (5) had worked for less than 1 year, 12% (3) had worked for 6 – 10 years and 4% (1) had worked for 11 – 15 years.

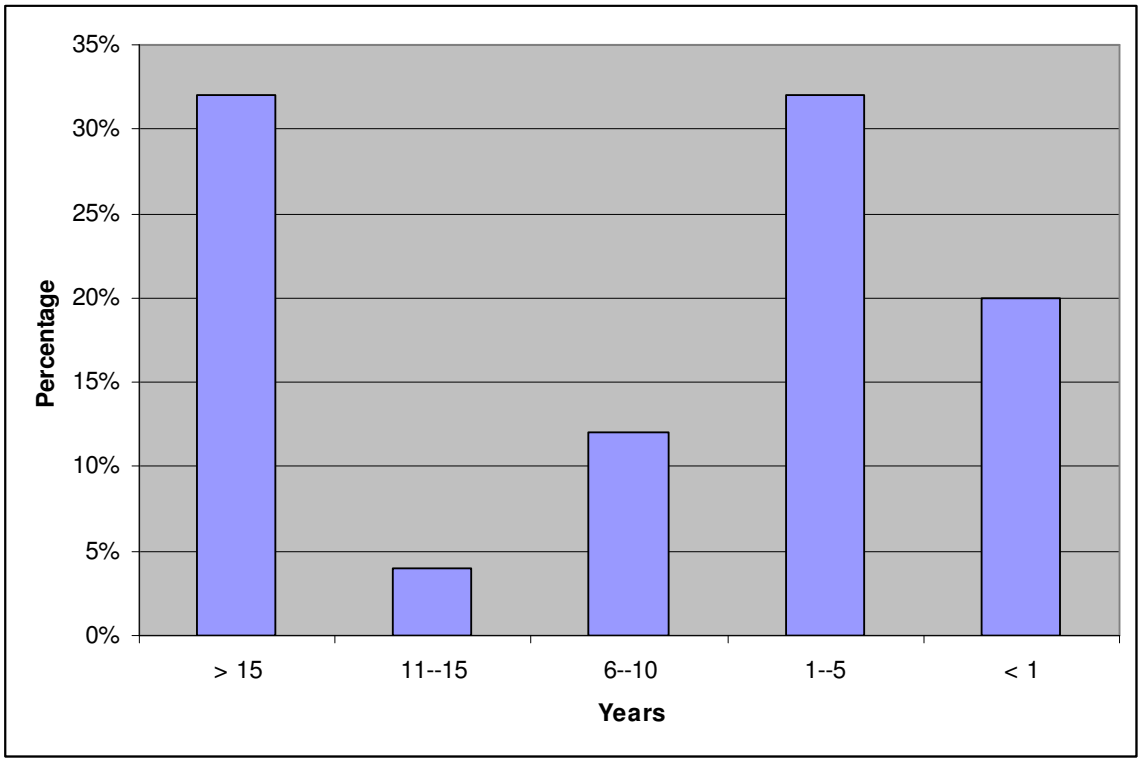

Figure 4-2 Number of year's respondents worked in the bank

Figure 4-3 shows the total number of employees in national banks versus multinational banks according to the Central Bank of UAE. Figure 4-4 shows the net profit before tax for national banks versus multinational banks according to the Emirates Bank Association [43].

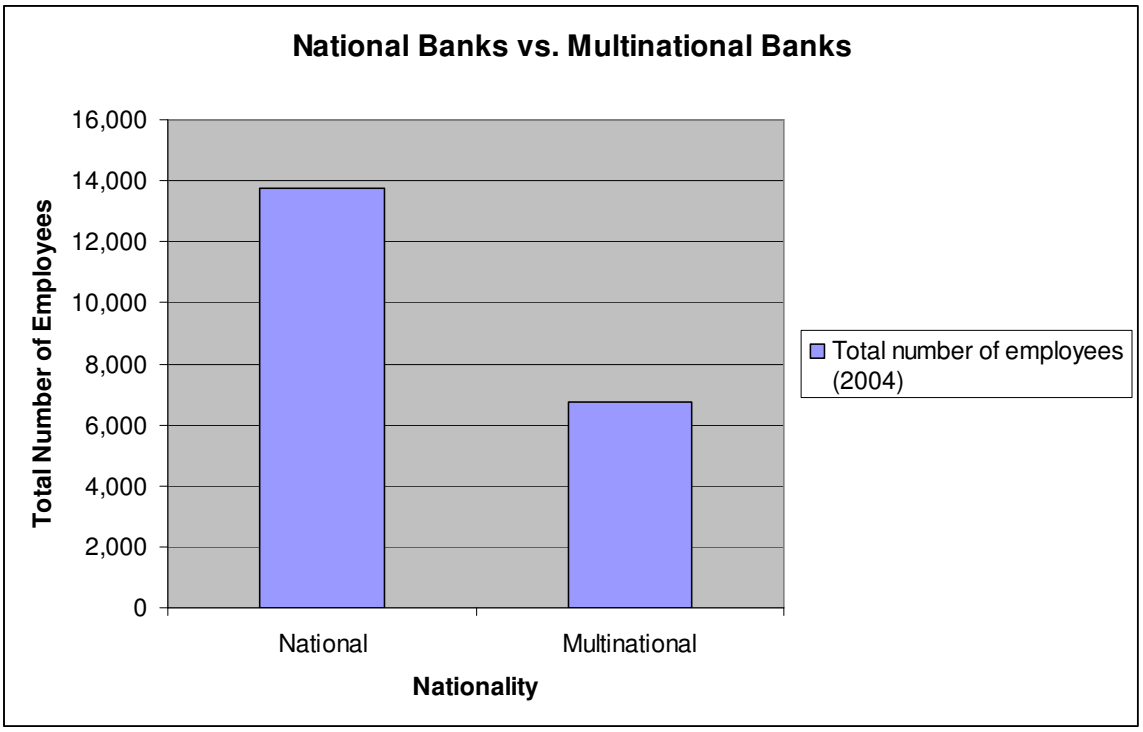

Figure 4-3 Total Number of Employees (2004) – National Banks vs. Multinational Banks
Source: Emirates Bank Association

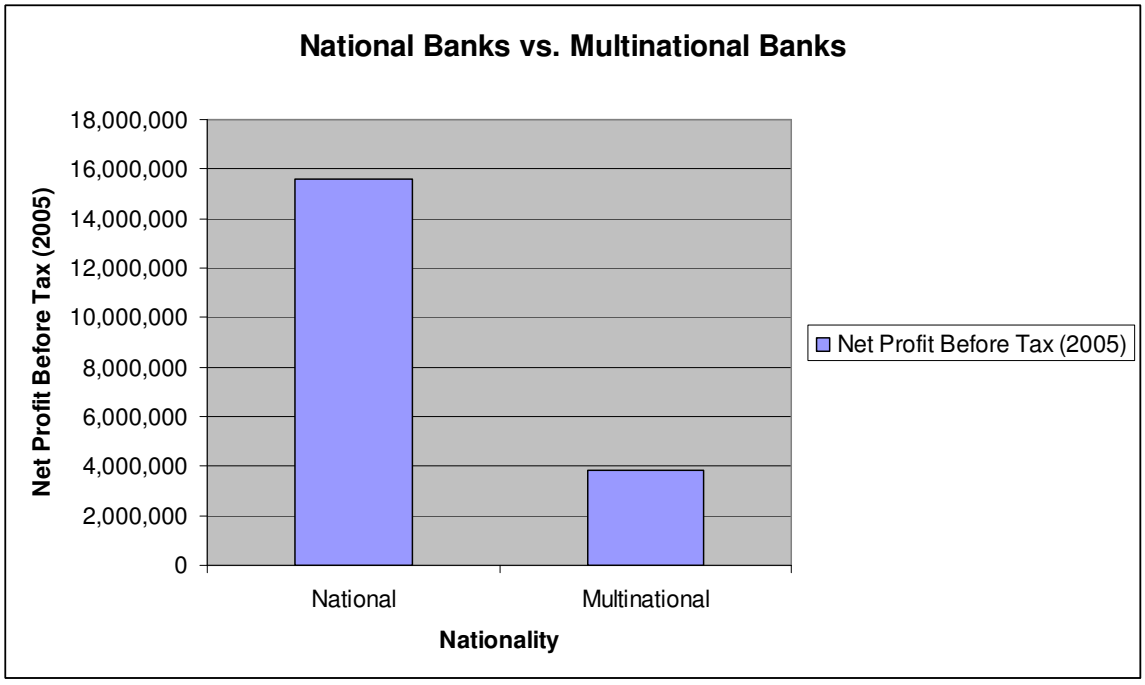

Figure 4-4 Net Profit Before Tax (2005) – National Banks vs. Multinational Banks
Source: Emirates Bank Association

4.3 Summary of Chapter

This chapter reviews the research design and validation based on the diffusion theories discussed in the previous chapter. An overall structure of the survey with the questions is also illustrated in this chapter. Finally, general information about the respondents is highlighted.

Chapter 5
Analysis and Discussion

Data were collected over a six-month period and Minitab was used as a statistical analysis tool. Due to the small sample size (n=25), Binary Logistic Regression and ANOVA were used as the primary analytical tools. The items or variables in the survey were formed as a five point Likert scale ranging from "strongly disagree" to "strongly agree", where the minimum = 1 and the maximum = 5. An overall weighted average was used for each construct. For example, Relative Advantage variable had 5 questions. Weighted average of the likert score (e.g. 3) for each question was calculated to get one number that describes this variable. Table 5-1 describes the statistics of the survey. The Kolmogorov – Smirov p-value indicates that there is no evidence to reject the hypothesis that the data follows a normal distribution at α (0.05) as shown. Appendix B shows the detailed analysis for each variable.

Table 5-1 Statistics for e-learning variables

Factors	Variables	Mean	S.D	Kolmogorov - Smirov P-Value
Innovation Characteristics	Relative Advantage	3.6	0.81	>0.15
	Compatibility	4.608	0.926	>0.15
	Complexity	2.968	0.579	>0.15
	Triability	2.048	0.371	>0.15
	Observability	3.832	0.816	>0.15
Organization Characteristics	Top Mgmt. Support	4.176	0.578	>0.15
	Championship	1.568	0.293	>0.15
	Centralization	4.16	0.688	>0.15
	Formalization	1.256	0.262	>0.15
	Internal Influence	3.92	1.077	>0.15
	External Influence	1.336	0.399	>0.15
	Organization Slack	4.04	0.841	>0.15
Environmental Characteristics	External Pressure	1.4	0.231	>0.15
	Competition	3.68	0.802	>0.15
	Coercive Influence	4.2	1	>0.15
	E-learning Readiness	3.152	0.856	>0.15

As Table 5-1 shows, with respect to the innovation characteristics, Triability (2.084/5) and Complexity (2.968/5) were generally not considered important for the adoption of e-learning for anti-money laundering. On the other hand, there is a perception that e-learning has high Compatibility (4.608/5) from the perspective of its adoption. At the organization level, Championship (1.568/5) and Formalization (1.256/5) of roles were not present for e-learning adoption. This means that banks in the UAE are generally perceived to lack a champion who will facilitate the acceptance and implementation of the e-learning innovation and the bank staff such as the compliance officer is not given the authority to select different training models for the anti-money laundering. In contrast, Top Management Support (4.176/5), Centralization (4.16/5) and Organization Slack (4.04/5) are perceived to be high. This implies, the bank's management knows well and

supports e-learning for anti-money laundering training but still lacks a champion and due to high centralization of e-learning and high availabilities of resources, it is assumed that banks will adopt e-learning quickly.

In addition, Coercive Influence (4.2/5) was high meaning that banks feel that they are under pressure from the government and the international compliance agencies to implement anti-money laundering training efficiently and in a timely manner. This is in contract to External Influence (1.336/5) which was low meaning that banks do not feel that they should adopt e-learning because their competitors have done so. The E-learning Readiness (3.152/5) was some where in the middle, where some banks think that they are ready to use e-learning and others are not.

5.1 Research Question 1

Q1: What are the characteristics that distinguish the national banks from the multinational banks in adopting the e-learning innovation?

5.1.1 Analysis of Variance

To answer this question, ANOVA F(1,22) was run on each variable where NB group included 13 national banks and MNB group included 11 multinational banks. Table 5-2 shows that *none of the variables significantly differed between the national banks from the multination banks*.

Table 5-2 Statistics for national vs. multinational

Factors	Variables	F (1,22)	P-value
Innovation Characteristics	Relative Advantage	0.69	0.414
	Compatibility	1.63	0.215
	Complexity	0.00	0.960
	Triability	0.15	0.705
	Observability	0.02	0.877
Organization Characteristics	Top Mgmt Support	0.03	0.854
	Championship	0.34	0.564
	Centralization	0.03	0.861
	Formalization	3.51	0.075
	Internal Influence	1.62	0.216
	External Influence	1.67	0.209
	Organization Slack	0.20	0.661
Environmental Characteristics	External Pressure	1.61	0.218
	Competition	0.44	0.516
	Coercive Influence	0.46	0.505
	E-Learning Readiness	0.17	0.680
	Stages for AML	0.20	0.656
	Degree of Adoption	0.41	0.527

5.1.2 Cluster Analysis

Since the results from ANOVA test showed no significant evidence on the characteristics that distinguish the national from the multinational banks, a K-means cluster analysis was carried out to define a new grouping schema [42]. K-means clustering is an algorithm that classifies or groups the objects based on given attributes into a number of group. The grouping is done by minimizing the sum of squares of distances between data and the corresponding cluster centroid. Thus the purpose of K-mean clustering is to classify the data based on selected characteristics, using an algorithm that can handle a large numbers of cases.

Multiple clusters was tried out using the 18 variables and the best distance centroid of clusters was for 2 clusters which was used to identify the groups where CG1 (Cluster

Group 1) includes 12 banks (7 national banks and 5 multinational banks) and CG2 (Cluster Group 2) includes 12 other banks (6 national banks and 6 multinational banks). One bank was excluded because it was an outlier to the cluster of observation. The groups included a combination of national and multinational banks where there were no obvious similarities in the banks and the number of employees ranged from 100 to more than a thousand.

Figure 5-1 shows the total number of employees in CG1 versus CG2 and Figure 5-2 shows the net profit before tax for CG1 versus CG2 according to the Emirates Bank Association [43].

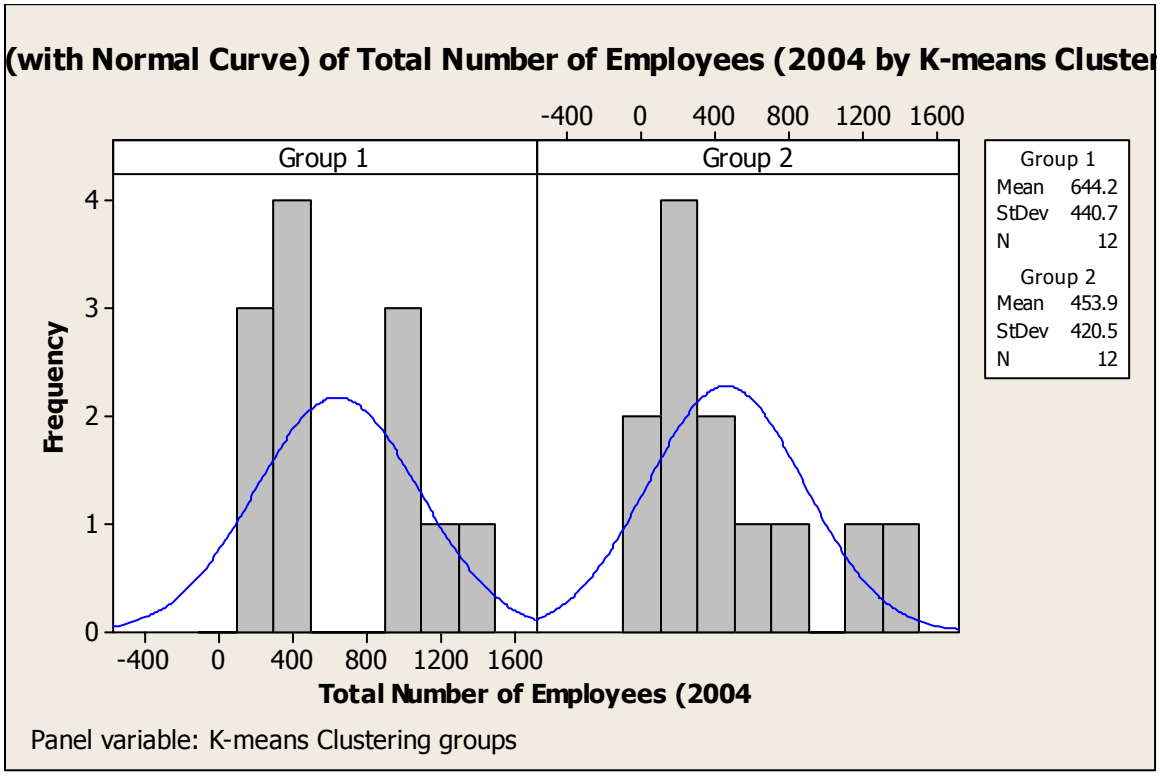

Figure 5-1 Total Number of Employees (2004) for CG1 vs. CG2

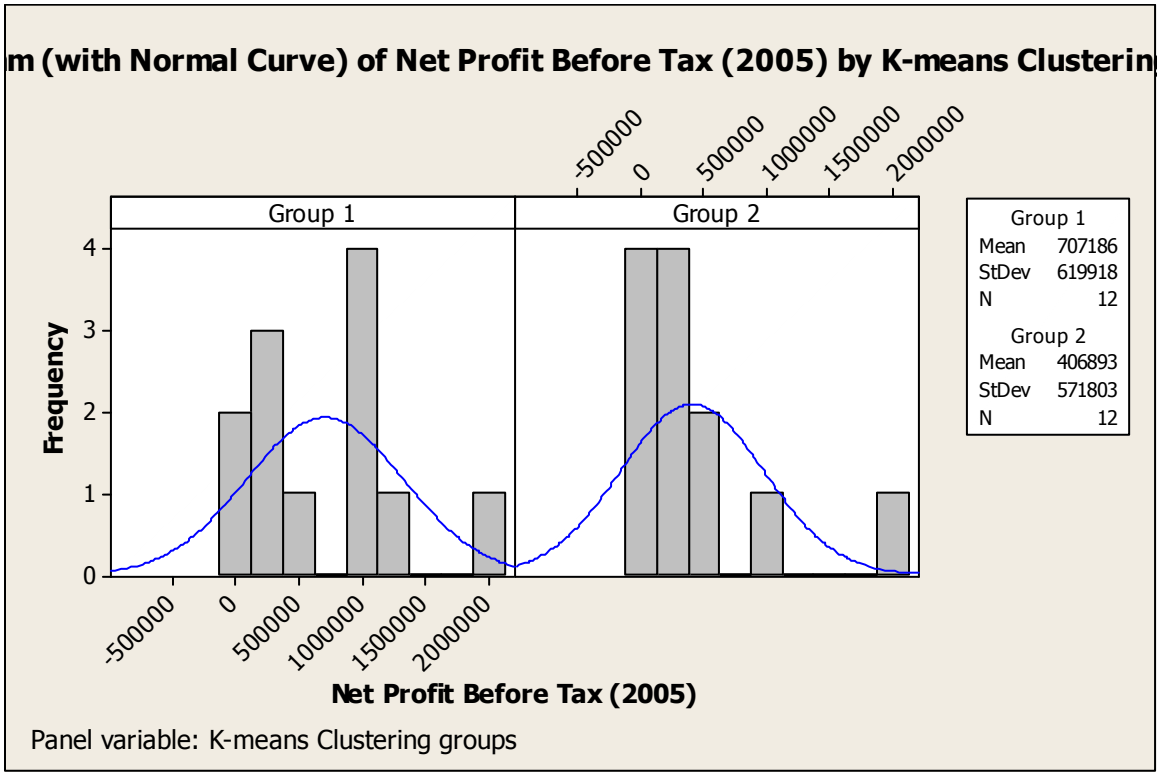

Figure 5-2 Net Profit Before Tax for CG1 vs. CG2

The Kolmogorov – Smirov p-value ($p < 0.01$) indicates that there is an evidence to reject the hypothesis that the data does not follow a normal distribution at α (0.05) as shown in Figure 5-3 and Figure 5-4.

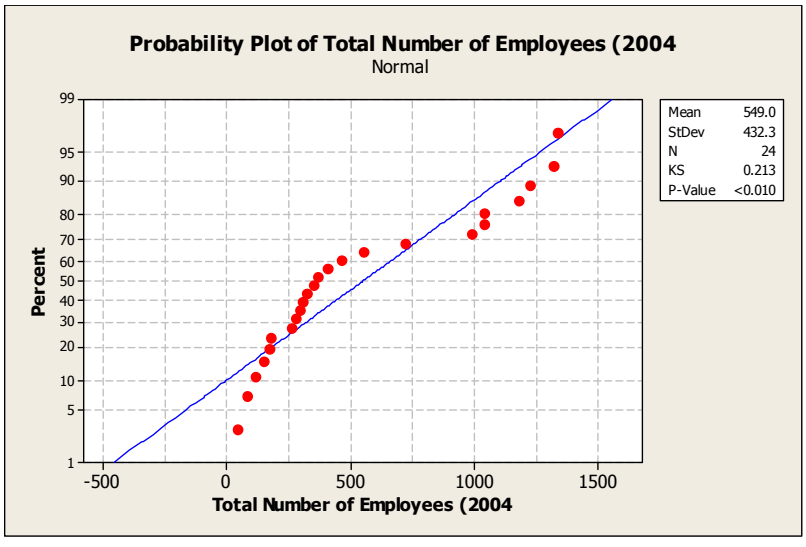

Figure 5-3 Probability plot of total number of employees

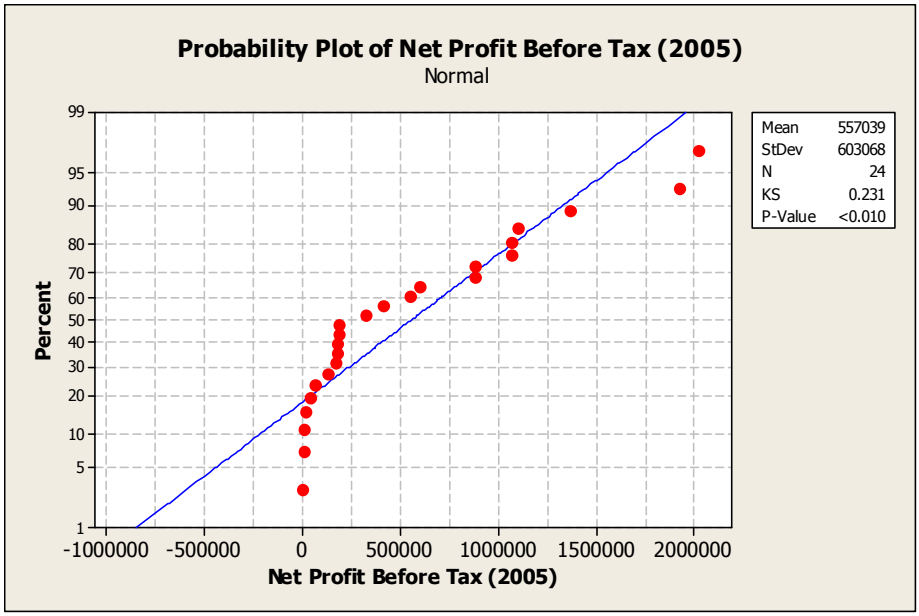

Figure 5-4 Probability plot of net profit before tax

Accordingly, Kruskal-Wallis Test as non-parametric test was run on the total number of employees versus k-means clustering groups. The test showed that there is no difference in the median (p-value<0.204). Another Kruskal-Wallis Test as was run on the net profit before tax versus k-means clustering groups. The test showed again that there is no difference in the median (p-value<0.149)

ANOVA was run on the new grouping to explore if there are any characteristics that will distinguish between the groups and Table 5-3 shows the result. The analysis revealed that Top Management Support, Formalization, Internal Influence, External Influence, Organization Slack, E-learning Readiness and Stages for AML are the significant variables that distinguish CG1 from CG2.

Table 5-3 Statistics CG1 vs. CG2

Factors	Variables	F (1,22)	P-value
Innovation Characteristics	Relative Advantage	0.41	0.528
	Compatibility	3.60	0.071
	Complexity	1.08	0.310
	Triability	0.29	0.598
	Observability	0.28	0.601
Organization Characteristics	Top Mgmt Support	13.71	0.001*
	Championship	1.94	0.177
	Centralization	2.57	0.123
	Formalization	9.16	0.006*
	Internal Influence	5.14	0.034*
	External Influence	5.90	0.024*
	Organization Slack	13.42	0.001*
Environmental Characteristics	External Pressure	0.77	0.391
	Competition	0.00	1.000
	Coercive Influence	0.35	0.560
	E-Learning Readiness	9.63	0.005*
	Stages for AML	14.75	0.001*
	Degree of Adoption	1.79	0.195

It seems that CG1 has more Top Management Support $F(1,22)$ $P<0.001$, less Formalization $F(1,22)$ $P<0.006$, more Internal Influence $F(1,22)$ $P<0.034$ and External Influence $F(1,22)$ $P<0.024$, more Organization Slack $F(1,22)$ $P<0.001$, more E-learning Readiness $F(1,22)$ $P<0.005$ and is advanced in Stages for AML $F(1,22)$ $P<0.001$ while CG2 had a higher Formalization $F(1,22)$ $P<0.006$. It seems that from the perspective of anti-money laundering, banks in the UAE are committed to it which raises the question of what is not clear in the adoption.

5.1.3 Banks Categories

The banks categories variable identifies the banks into five categories: Innovators, Early Adopters, Early Majority, Late Majority and Laggards. Innovators are the first to adopt a new idea; they are able to deal with a higher degree of uncertainty than the other adopter categories. They also have the ability to understand and apply complex technical

knowledge. Early Adopters serve as leaders for individuals to obtain advice and instruction before adopting a new idea. The Early Majority are usually the followers in adopting innovations. Late Majority are doubter and do not adopt new ideas until the majority of the members in the social system have done so. Laggards are the last individuals to adopt an innovation. They should make sure that a new idea will be successful before they will adopt.

5.1.3.1 Dot plot

The dot plot illustrated in Figure 5-5 shows that multinational banks think that they are Innovators towards adopting an innovation. Local banks scored low results in this category.

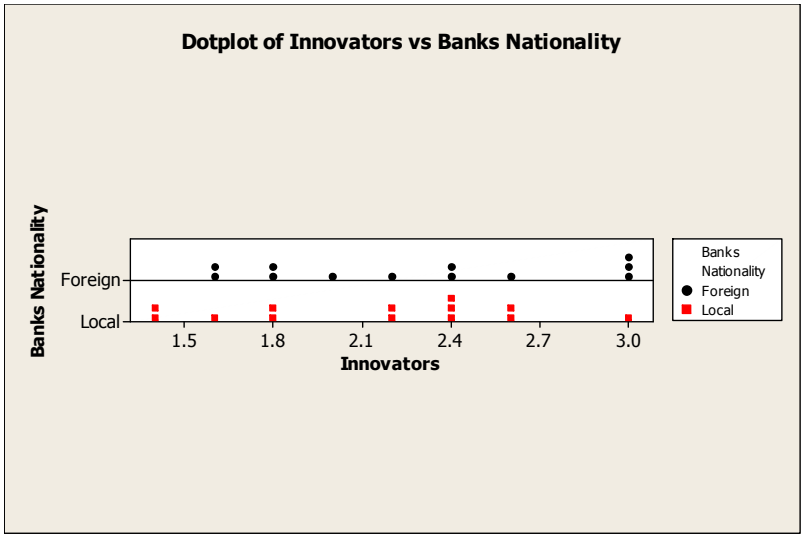

Figure 5-5 Dot plot for Innovators vs. Bank Nationality

The dot plot illustrated in Figure 5-6 shows that there is no huge difference between the local and the multinational banks and the overall scores were low.

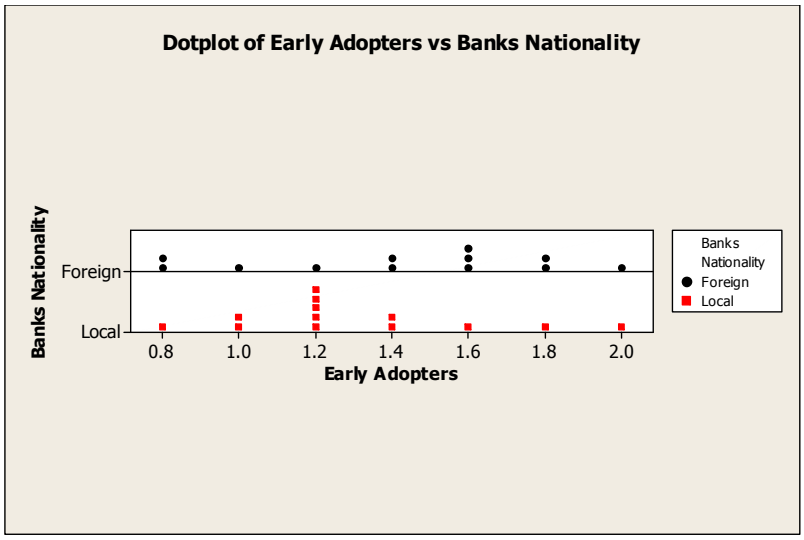

Figure 5-6 Dot plot for Early Adopters vs. Bank Nationality

The dot plot illustrated in Figure 5-7 shows that there is no huge difference between the local and the multinational banks and the overall scores were low.

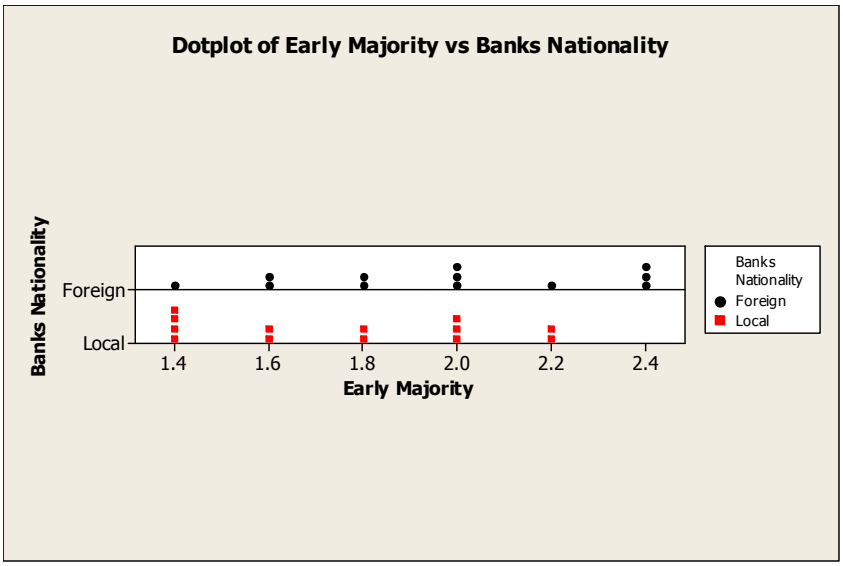

Figure 5-7 Dot plot for Early Majority vs. Bank Nationality

The dot plot illustrated in Figure 5-8 shows that there is no huge difference between the local and the multinational banks and the overall scores were very low.

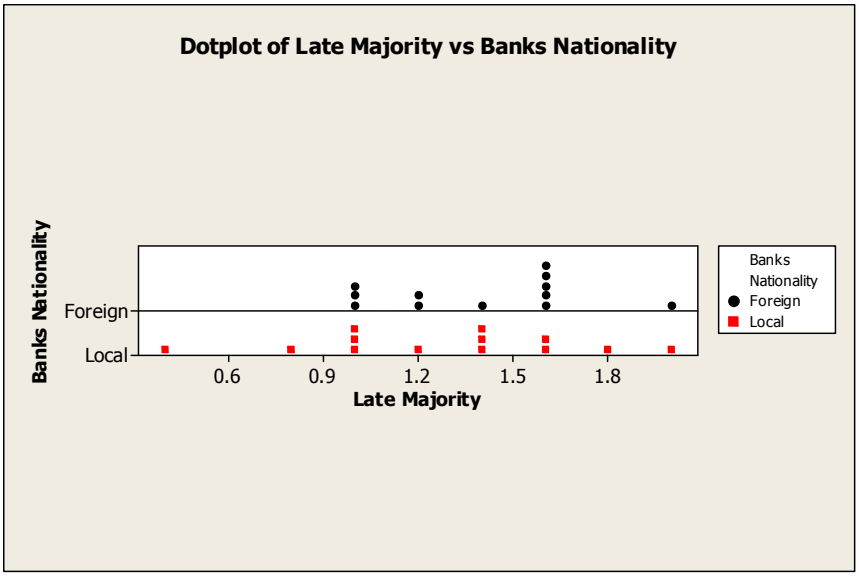

Figure 5-8 Dot plot for Late Majority vs. Bank Nationality

The dot plot illustrated in Figure 5-9 shows that most of the local banks classify themselves in the Laggards category.

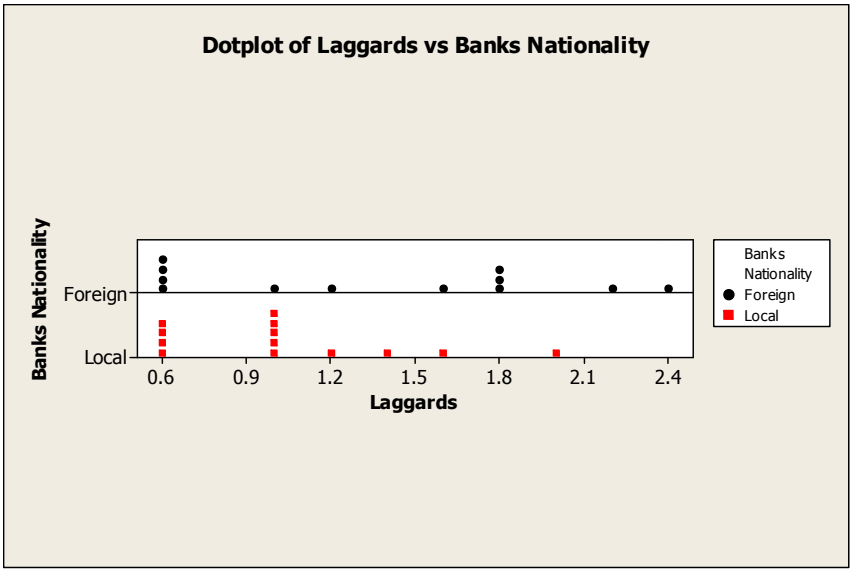

Figure 5-9 Dot plot for Laggards vs. Bank Nationality

5.1.3.2 Binary Logistic Regression

In order to determine the causal relationship between Banks Categories and Banks Nationality, Binary Logistic Regression (BLR) [42] was carried out on each of the variables in the survey. Binary logistic regression is a technique for predicting the mean value of a binary response variable as a function of one or more covariates. This is used to determine factors that affect the presence or absence of a characteristic when the dependent variable has two levels. The result of the analysis revealed that there is no causal relationship between the Banks Categories (Innovators (p-value = 0.336), Early Adopters (p-value = 0.942), Early Majority (p-value = 0.193), Late Majority (p-value = 0.984) and Laggards (p-value = 0.141)) and the banks nationality.

5.2 Research Question 2

Q2: What are the characteristics that significantly affect the banks that are using e-learning for anti-money laundering training from those who are not using e-learning?

Out of the twenty five banks that responded to the survey, five banks were using e-Learning for anti-money laundering training and twenty were not. There were no obvious similarities in the banks that had adopted e-Learning; this group included both local and foreign banks and the number of employees ranged from 300 to more than a thousand.

Figure 5-10 shows the total number of employees in UEL versus NEL group and Figure 5-11 shows the net profit before tax for UEL versus NEL group according to the Emirates Bank Association [43].

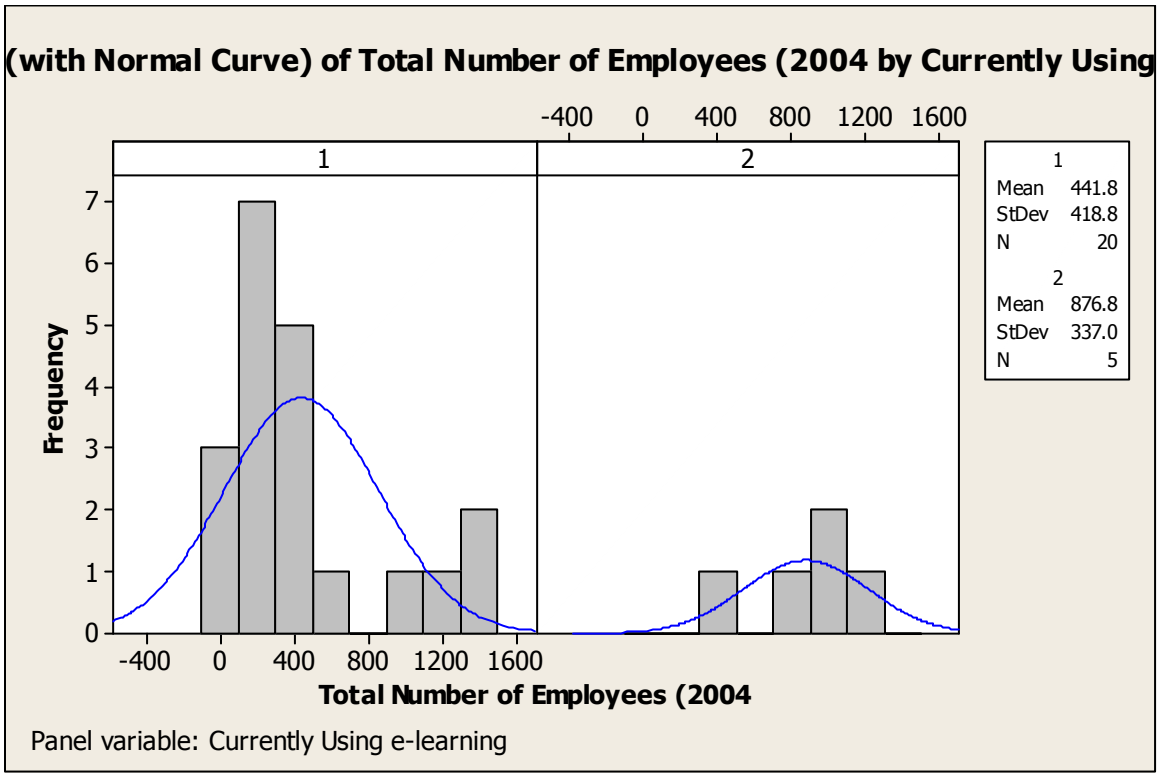

Figure 5-10 Total Number of Employees – UEL group (2) vs. NEL group (1)

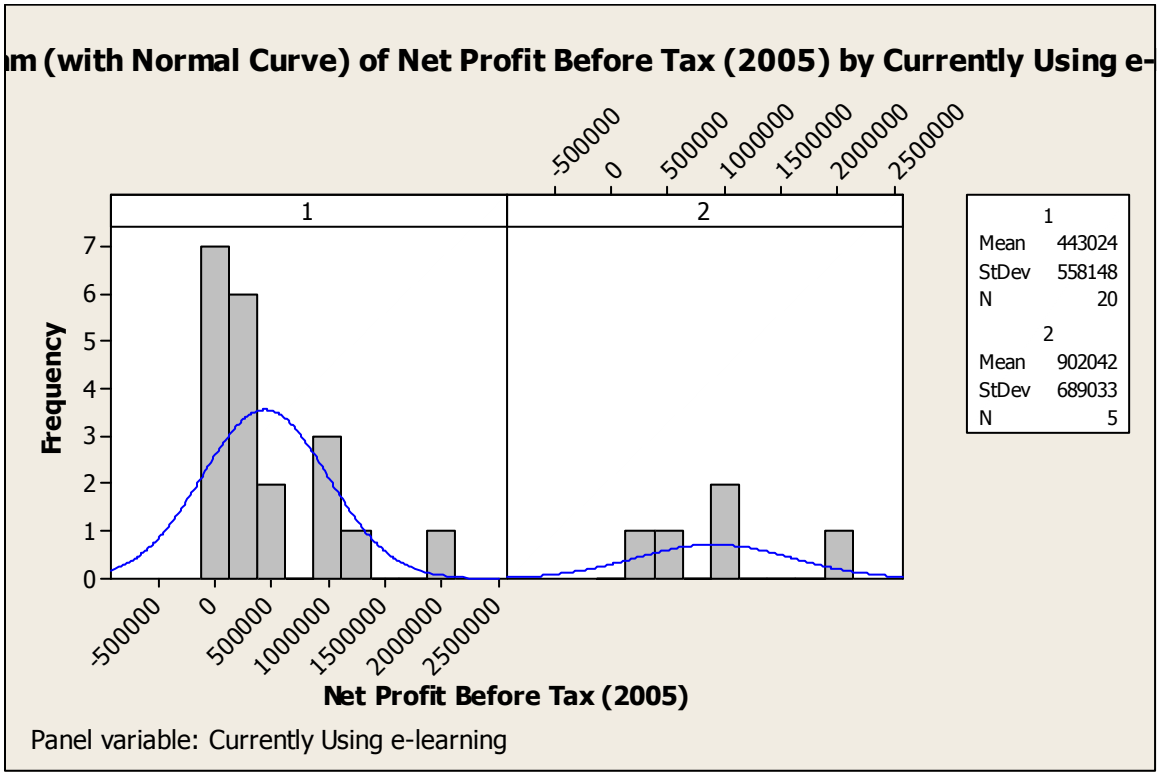

Figure 5-11 Net Profit Before Tax – UEL group (2) vs. NEL group (1)

The Kolmogorov – Smirov p-value ($p < 0.01$) indicates that there is an evidence to reject the hypothesis that the data does not follow a normal distribution at α (0.05) as shown in Figure 5-3 and Figure 5-4. Accordingly, Kruskal-Wallis Test as non-parametric test was run on the total number of employees versus UEL group and NEL group. The test showed that there is no difference in the median (p-value<0.118). Another Kruskal-Wallis Test as was run on the net profit before tax versus UEL group and NEL group. The test showed that there is difference in the median (p-value<0.035) but this result does not indicate anything since this test is just comparing medians.

5.2.1 Analysis of Variance

In order to determine factors that distinguished banks that do not use e-Learning (NEL group) from those who do use e-Learning (UEL group), ANOVA [42] was carried out on each of the variables in the survey. The analysis revealed that Complexity (ANOVA

F(1,23)=4.81,p<0.039) and e-Learning Readiness (ANOVA F(1,23)=9.64,p<0.005) are the significant factors that distinguished NEL group from UEL group. Table 5-4 shows the ANOAVA results.

Table 5-4 Statistics for NEL and UEL groups

Factors	Variables	F (1,23)	P-value
Innovation Characteristics	Relative Advantage	0.24	0.632
	Compatibility	1.38	0.252
	Complexity	4.81	0.039*
	Triability	0.56	0.462
	Observability	0.21	0.651
Organization Characteristics	Top Mgmt Support	0.94	0.344
	Championship	1.74	0.200
	Centralization	0.75	0.395
	Formalization	0.05	0.824
	Internal Influence	0.41	0.527
	External Influence	0.16	0.697
	Organization Slack	3.01	0.096
Environmental Characteristics	External Pressure	0.00	1.000
	Competition	0.99	0.329
	Coercive Influence	1.00	0.328
	E-Learning Readiness	9.64	0.005*
	Stages for AML	2.32	0.141
	Degree of Adoption	3.08	0.092

Since no prior research in the area of adopting e-learning for anti-money laundering training in banks was found at the time of writing this thesis, the research findings will be related with previous research that was done on the adoption of IT/ICT. Accordingly, Bishop, Clark and Grand [23] recommended that available resources are management support and follow up are important for the adoption of IT/ICT, and these variables showed no significant in this analysis. Moreover, Dhanarajan [24] indicated that lack of existing infrastructure, lack of commitment from top management, low level of knowledge and skills and need to train intended users influence the adoption. These

results are consistent with this study where these factors are considered in the E-learning Readiness variable. Ebersole and venddam [29] had the same contribution as Dhanarajan [24] as well. On the other hand, Tronatzky and Klein [32] found that innovation characteristics have a relationship to the innovation adoption. So, they proposed that users are more likely to use the technology that has a high Relative Advantage. However, in this research, Relative Advantage seem to have no effect of the adoption of the e-learning innovation. Finally, Ramamurthy [33] emphasized that Compatibility has a positive influence on the adoption, but the analysis showed that this variable has no influence in the adoption as well. Furthermore, Ramamurthy [33] also found that technology attributes such as speed, reliability, accessibility and top management support and allocation of adequate resources for technology investment have influenced the adoption. Similarly, this research showed that speed, reliability and accessibility which are part of the E-learning Readiness variable, have a significant impact on the adoption. However, top management support was not significant in the analysis.

5.2.2 Binary Logistic Regression

In order to determine the causal relationship between Complexity, E-learning Readiness and e-learning adoption Binary Logistic Regression (BLR) [42] was carried out on each of the variables in the survey. Binary logistic regression is a technique for predicting the mean value of a binary response variable as a function of one or more covariates. This is used to determine factors that affect the presence or absence of a characteristic when the dependent variable has two levels.

The analysis revealed that Complexity (p-value=0.056) and E-Learning Readiness (p-value=0.045) are the significant factors that distinguished NEL group from UEL group. The binary logistic regression was used as shown in equation 1, where a, b are parameters coefficient of the module and X is each one of the variables (Complexity, E-learning Readiness) and Y is either 0 (not using e-learning) or 1 (using e-learning):

$$Y = \frac{e^{(a+bX)}}{1 + e^{(a+bX)}} \qquad (1)$$

The results of Binary Logistic Regression showed that there is a clear causal relationship between the two factors and the two groups and whether they are using e-learning for anti-money laundering. The odd ratio for Complexity is 7.38 and for E-learning Readiness is 25.07 which is considered very high for the later case.

Moreover, a binary logistic regression was run on the total number of employees and the net profit before tax, where the results revealed that there is no relation between using e-learning and the total number of employees (p-value<0.188) and the net profit before tax (p-value<0.573).

Figure 5-12 illustrates the dot plot of total number of employees versus using e-learning and Figure 5-13 illustrates the dot plot of net profit before tax versus using e-learning.

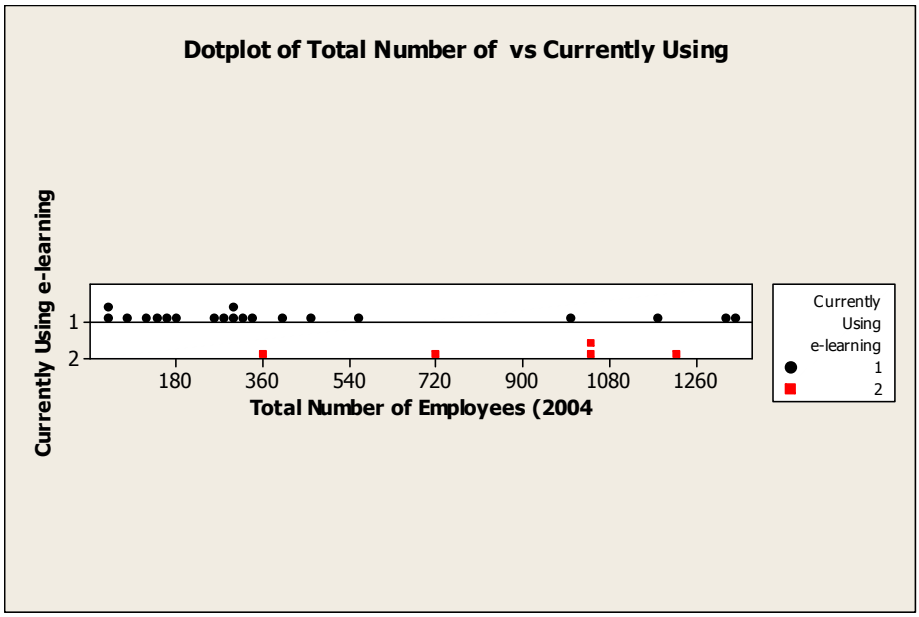

Figure 5-12 dot plot of total number of employees versus using e-learning

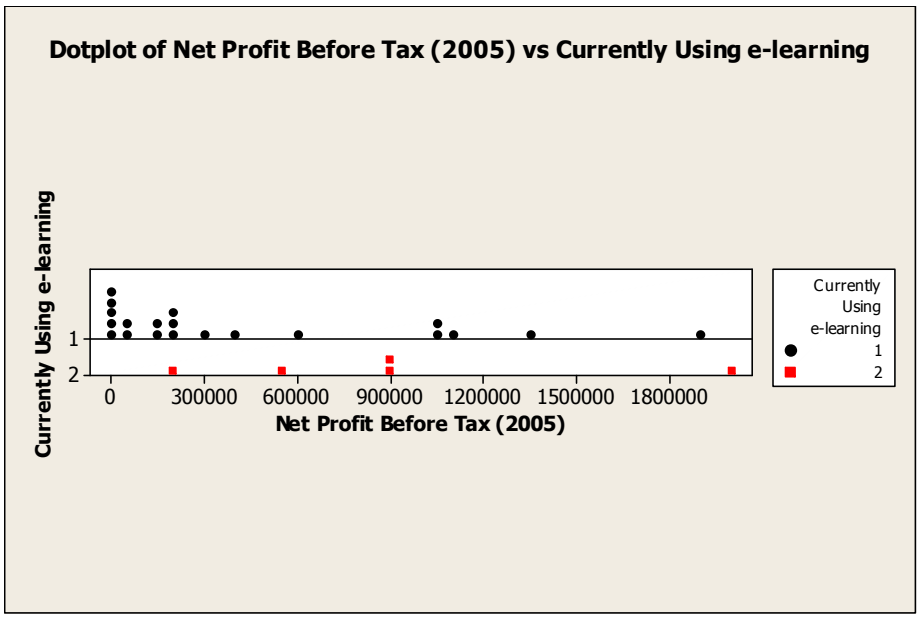

Figure 5-13 dot plot of net profit before tax versus using e-learning

5.2.2.1 Complexity

Figure 5-14 shows a dot plot for Complexity where it is obvious that banks who perceive high Complexity uses e-learning for AML since the way the complexity questions were formulated, low results mean high Complexity and high results mean low Complexity. The Complexity variable, is concerned with the ease of using, learning, and implementing the innovation. So, banks who perceive e-learning to be of low Complexity (i.e., high score of complexity in the dot plot), tend to use or implement e-learning to accomplish anti-money laundering training.

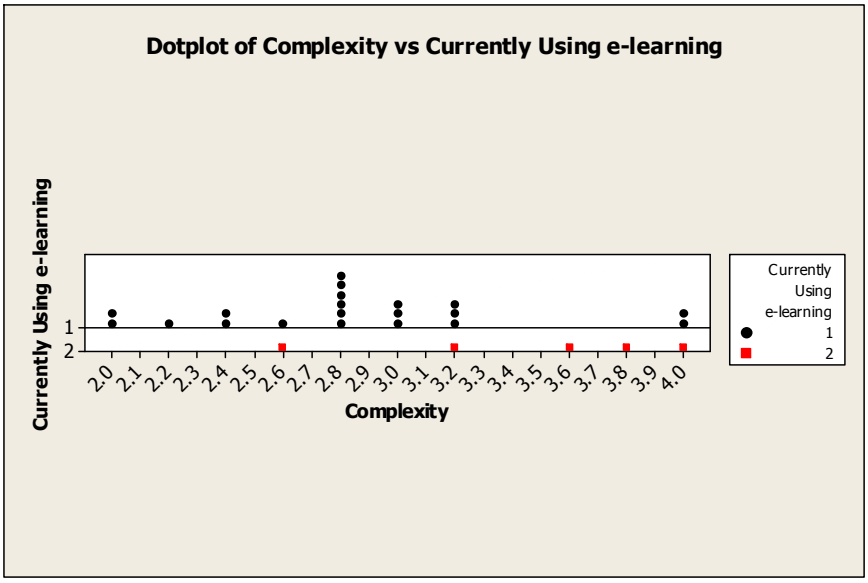

Figure 5-14 Dot plot for Complexity variable

The dot plot shows that using e-learning becomes very high as the perceived Complexity becomes lower (beyond 3.3). The two banks that are not using e-learning (who scored 4) were local banks and they were in CG2 of the k-means clustering.

5.2.2.2 E-learning Readiness

Figure 5-15 shows the dot plot for E-learning Readiness, where banks who perceive high E-learning Readiness tend to use e-learning for anti-money laundering training. Also, E-learning Readiness indicates that the bank top management supports e-learning, the bank have enough resources, the existing IT infrastructure of the bank is ready and implemented, knowledge and skill of the employee bank is good enough, and a change management plan have been implemented. The three banks that are not using e-learning (who scored 4) were national banks.

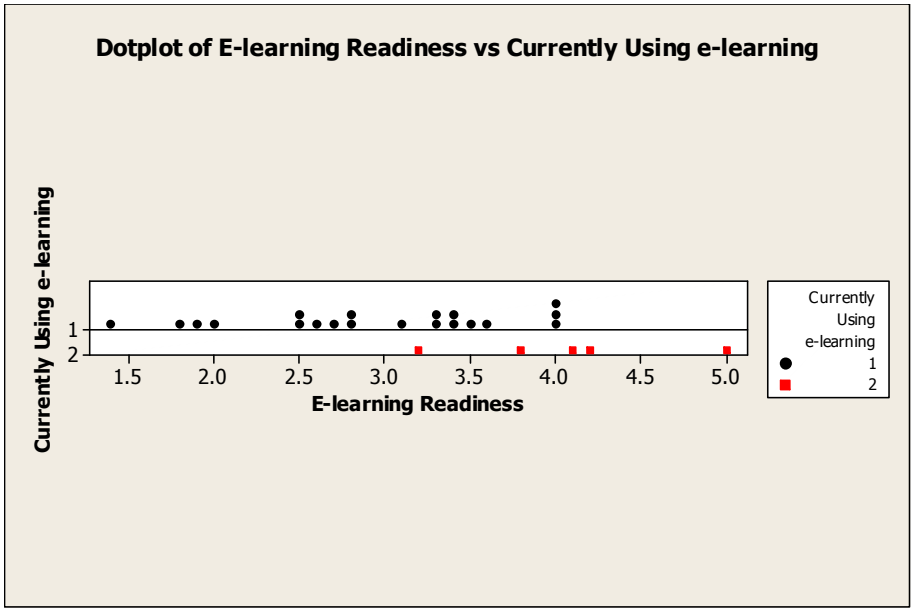

Figure 5-15 Dot plot for E-learning Readiness variable

Since e-Learning Readiness appears to be a common factor that distinguishes the groups, further in-depth analysis (ANOVA) was run on each question between the banks that are using e-learning for anti-money laundering training versus the banks that are not using e-learning for anti-money laundering training as shown in Table 5-5. From the results it seems that banks that are not using e-Learning for anti-money laundering

training differed from those that did even in the way they defined e-Learning (ANOVA $F(1,23)=8.85, p<0.007$). Access to the web (ANOVA $F(1,23)=4.90, p<0.037$) and bad prior experiences with e-Learning (ANOVA $F(1,23)=6.68, p<0.017$) were some other factors. These banks also tend to be laggards in training their employees for the digital age (ANOVA $F(1,23)=5.50, p<0.028$). These also have a perceived risk of e-learning threatening the traditional learning mechanisms within the bank (ANOVA $F(1,23)=4.07, p<0.055$). The banks not adopting e-Learning for AML training are also not clear on how to go about acquiring this technology in an intelligent manner (ANOVA $F(1,23)=7.43, p<0.012$). There is no clear change management plan for introducing e-learning for these banks (ANOVA $F(1,23)=4.26, p<0.05$). There is no budgeting process for these banks in order to invest in this technology (ANOVA $F(1,23)=6.68, p<0.017$). Finally, banks not using e-Learning were not convinced that e-Learning was the right way for their banks (ANOVA $F(1,23)=4.73, p<0.040$). Other factor such as bank's ability to demonstrate business benefits of e-Learning do not seem to be significant. Business benefits involved the investment in cost, quality of the product, service and speed. Finally, the use of internet and intranets for normal business functions of the bank was not a distinguishing factor. This means that not all the core business functions are web-enabled and most internal work and communications in the banks is not online.

Table 5-5 Significant statistics for E-Learning Readiness for NEL group and UEL group

Questions	F(1,23)	P-value	UEL group
How the bank does define "e-Learning?" (i.e.: traditional computer Based Training, knowledge management, performance support and other web-enabled distance learning approaches)	8.85	0.007*	↑

How will the bank overcomes any bad prior experiences you and others have had with technology based learning? (i.e.: blamed for past disappointments, experiences as lessons learned and we try to improve over time.)	6.68	0.017*	
How much access do people have to the web (anyone, any time, anywhere)?	4.90	0.037*	
What is the level of the bank's expertise in instructional and information design? (pretty weak, growing, strong)	15.05	0.001*	
Is the bank ready to move beyond a predominant reliance on classroom training to a more balanced approach with e-Learning?	4.07	0.055*	
Does senior management support e-Learning?	12.60	0.002*	
Does the bank have a Change management plan for introducing e-Learning?	4.26	0.050*	
Does the bank have a plan to help the training function reinvent itself for the digital age?	5.50	0.028*	
What is the climate in the bank to learning in alternative locations, especially the work site?	9.66	0.005*	
Is the bank willing to allow e-Learning to thrive, perhaps at the expense of some of the more traditional parts of the training organization?	7.85	0.010*	
How prepared is the bank to invest in, and incubate e-Learning for several years in order to get it firmly established? (i.e.: is their a budgeting process)	6.68	0.017*	
Does the bank has a good handle on what it is buying in the e-Learning marketplace – can it differentiate quality products and weed out redundancies?	7.43	0.012*	
How committed are you, personally, to e-Learning? Are you ready?	4.73	0.040*	

Table 5-6 Non-significant statistics for E-Learning Readiness for NEL group and UEL group

Questions	F(1,23)	P-value	UEL
How well is the bank using (Internet and Intranet) technology to run its business?	2.35	0.139	↓
How prepared (skills, knowledge, motivation) is your workforce to compete and win in the high-tech, new economy?	0.56	0.462	↓
Do you differentiate between instructional needs (training) and informational needs (knowledge management), and do you make the right decisions about when to use each?	2.78	0.109	↓
Can the bank demonstrate the business benefits of e-Learning?	1.65	0.212	↓
How prepared is the bank to deal with a large and increasingly complex e-Learning marketplace?	3.59	0.071	↓
Is the bank prepared to outsource its training functions and manage them externally so that it can concentrate its resources on more valuable areas?	0.53	0.473	↓

From tables 5-5 and 5-6 it seems that the banks that are classified in group NEL are:

- Not aware of the existence of this technology.
- Have had prior bad experience in using technology based training.
- Have limited access to the web which makes it complicated for them to use the technology.
- Have issues with their staff skills, so they need to focus on spending more time and money to upgrade their skills either through hiring or training.
- Prefer classroom training as a default delivery approach, so they have to start using a combined e-Learning and classroom strategy.
- Have minimum support from their senior management as they don't appear to be interested, since it is a new approach.

- Do not have a change management plan to help the staff to adapt to the changes that are coming.
- Show a kind of resistance to learning at the work site due to their lack in understanding that work and learning go hand-in-hand and learning can take place anywhere.
- Show that if e-Learning is going to affect or cut off the classroom business then they are not willing to implement it since they don't have a plan to re-allocate their resources.
- Have not structured a budgeting process with their senior management to allow long-term funding of e-Learning.
- Do not have a good approach to vendor relationships and purchasing to evaluate quality which will achieve increase in cost and avoid redundancy.
- Finally individuals were asked if they are committed to e-Learning, so group NEL answered that they are not convinced that e-Learning is the right way for their banks, or they don't have enough capability to move forward towards implementing e-Learning strategy.

5.2.3 Relating Cluster analysis

It was discovered that the 4 banks (out of 5) that use e-learning for AML training were in the same k-means group (CG1). This suggests that CG1 represent a set of variables that separates the banks who will adopt e-learning from those who will not adopt e-learning as shown in Table 5-7. One bank was considered as an outlier.

Table 5-7 Significant statistics for CG1 vs. CG2 (from K-means clustering)

Factors	Variables	F(1,22)	P-value
Organization Characteristics	Top Mgmt Support	13.71	0.001*
	Internal Influence	5.14	0.034*
	External Influence	5.90	0.024*
	Organization Slack	13.42	0.001*
	E-Learning Readiness	9.63	0.005*
	Stages for AML	14.75	0.001*

From Table 5-7, Complexity variable was not significantly distinguishing CG1 and CG2 although this variable was significantly distinguishing NEL group and UEL group. Another in-depth analysis (ANOVA) was run on each question of the e-learning readiness for the k-means groups (CG1 and CG2) and table 5-8 shows the result.

Table 5-8 Statistics for E-learning Readiness for CG1 vs. CG2

Questions	F(1,23)	P-value
How well is the bank using (Internet and Intranet) technology to run its business?	4.77	0.040*
How prepared (skills, knowledge, motivation) is your workforce to compete and win in the high-tech, new economy?	2.43	0.133
How the bank does define “e-Learning?” (i.e.: traditional computer Based Training, knowledge management, performance support and other web-enabled distance learning approaches)	7.97	0.010*
How will the bank overcomes any bad prior experiences you and others have had with technology based learning? (i.e.: blamed for past disappointments, experiences as lessons learned and we try to improve over time.)	1.18	0.288
How much access do people have to the web (anyone, any time, anywhere)?	1.74	0.201
Do you differentiate between instructional needs (training) and informational needs (knowledge management), and do you make the right decisions about when to use each?	1.01	0.325
What is the level of the bank’s expertise in instructional and information design? (pretty weak, growing, strong)	4.96	0.037*
Is the bank ready to move beyond a predominant reliance on classroom training to a more balanced	2.78	0.110

approach with e-Learning?		
Does senior management support e-Learning?	4.78	0.040*
Does the bank have a change management plan for introducing e-Learning?	4.02	0.057
Can the bank demonstrate the business benefits of e-Learning?	7.18	0.014*
Does the bank have a plan to help the training function reinvent itself for the digital age?	9.27	0.006*
What is the climate in the bank to learning in alternative locations, especially the work site?	7.44	0.012*
Is the bank willing to allow e-Learning to thrive, perhaps at the expense of some of the more traditional parts of the training organization?	5.86	0.024*
How prepared is the bank to invest in, and incubate e-Learning for several years in order to get it firmly established? (i.e.: is their a budgeting process)	10.13	0.004*
How prepared is the bank to deal with a large and increasingly complex e-Learning marketplace?	7.54	0.012*
Does the bank has a good handle on what it is buying in the e-Learning marketplace – can it differentiate quality products and weed out redundancies?	9.32	0.006*
Is the bank prepared to outsource its training functions and manage them externally so that it can concentrate its resources on more valuable areas?	7.86	0.010*
How committed are you, personally, to e-Learning? Are you ready?	2.01	0.170

Table 5-8 illustrates the statistics for E-learning Readiness for CG1 vs. CG2 and by comparing these results with the statistics for NEL vs. UEL, both groups agreed that the following variables were significantly important for the e-learning adoption for anti-money laundering training:

- Having a definition for e-learning that includes alternatives such as knowledge management, performance support and other web-enabled distance learning approaches.

- Establishing a strong competency in the instructional and information design and maintaining the expertise in these fields.
- Top Management Support and commitment.
- Having and implementing e-learning and change management strategies to help bank employees adapt to the changes that are coming.
- Creating the environment for e-learning in the matter of location, especially at the work site.
- Bank management knows that e-learning will reduce the classroom business and they are prepared to re-allocate the resources accordingly.
- Having a well structured budgeting process to allow a long-term investment for e-learning with the support from the top management support.
- Implementing an agreement and good relationship with the vendors of e-learning where it will yield to an increased cost savings and experiencing less redundancy.

Moreover, both groups agreed that the following variables were not significantly important for the e-learning adoption for anti-money laundering training:

- Well prepared in the case of skills and knowledge.
- Differentiating between instructional needs (training) and informational needs (knowledge management) and making the right decisions about when to use each.

In addition, the following variables were significantly important for CG1 vs. CG2, while they were not important for NEL group vs. UEL group:

- Most core business functions are web-enabled and most internal work and communications are online.

- Demonstrating the business benefits of e-learning in the mater of cost savings and quality.
- Dedicating more time and resources to get the most out of the large e-learning industry.
- Outsourcing the training functions and managing them externally so that they can concentrate the bank's resources on more valuable areas.

The following variables were significantly important for NEL group vs. UEL group, while they were not important for CG1 vs. CG2:

- Overcoming any bad prior experiences have had with technology based learning and look at prior bad experiences as lessons learned and seek improvements over time.
- Accessibility to the applications and functions any time and anywhere.
- Implementing a balanced approach between e-learning and classroom learning.
- Having a change management plan for introducing e-learning.
- Personal commitment from the bank's employees to adopt the e-learning innovation.

5.2.4 Banks Categories

The banks categories variable identifies the banks into five categories: Innovators, Early Adopters, Early Majority, Late Majority and Laggards. Innovators are the first to adopt a new idea; they are able to deal with a higher degree of uncertainty than the other adopter categories. They also have the ability to understand and apply complex technical knowledge. Early Adopters serve as leaders for individuals to obtain advice and instruction before adopting a new idea. The Early Majority are usually the followers in

adopting innovations. Late Majority are doubter and do not adopt new ideas until the majority of the members in the social system have done so. Laggards are the last individuals to adopt an innovation. They should make sure that a new idea will be successful before they will adopt.

5.2.4.1 Dot plot

Figure 5-16 shows that banks that are using e-learning for anti-money laundering training did not score high results as Innovators. Hence is it not true to say that there is a relationship between the Innovator category and the adoption of e-learning.

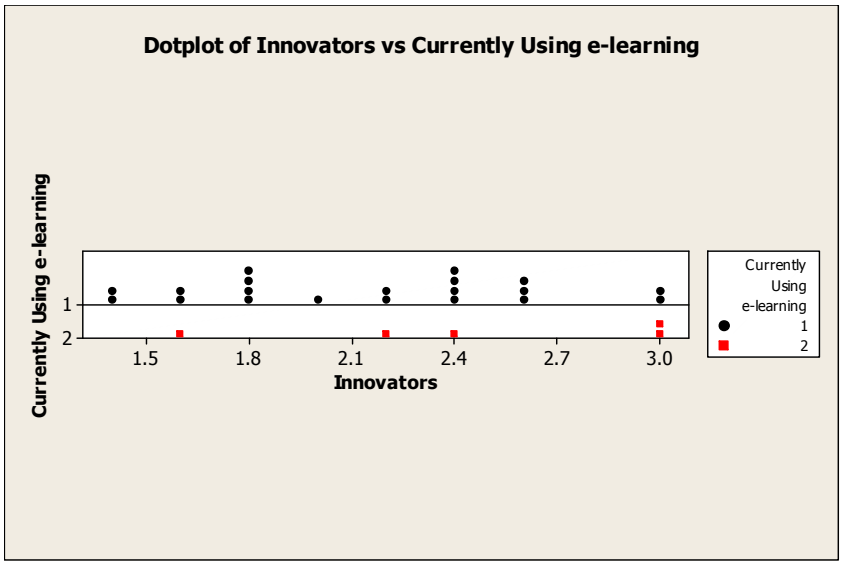

Figure 5-16 Dot plot for Innovators variable

Figure 5-17 shows that banks that are using e-learning for anti-money laundering training scored low results as Early Adopters category.

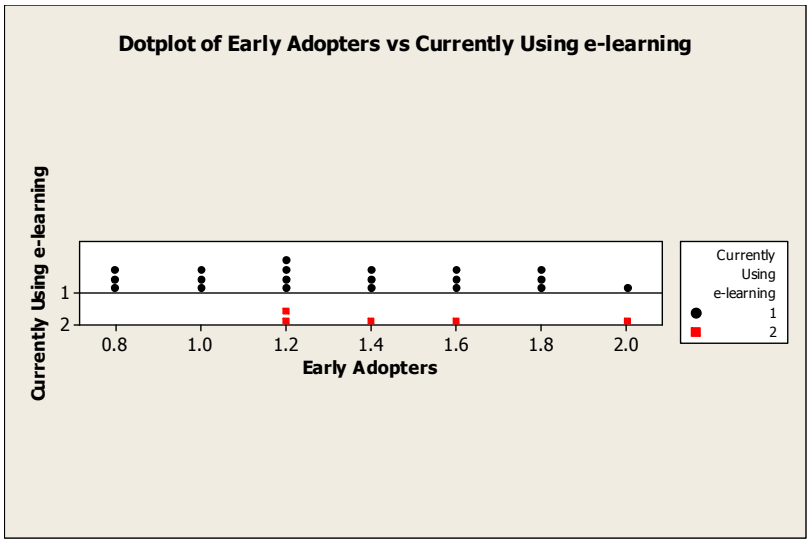

Figure 5-17 Dot plot for Early Adopters variable

Figure 5-18 shows that banks that are using e-learning for anti-money laundering training again scored low results for the Early Majority category.

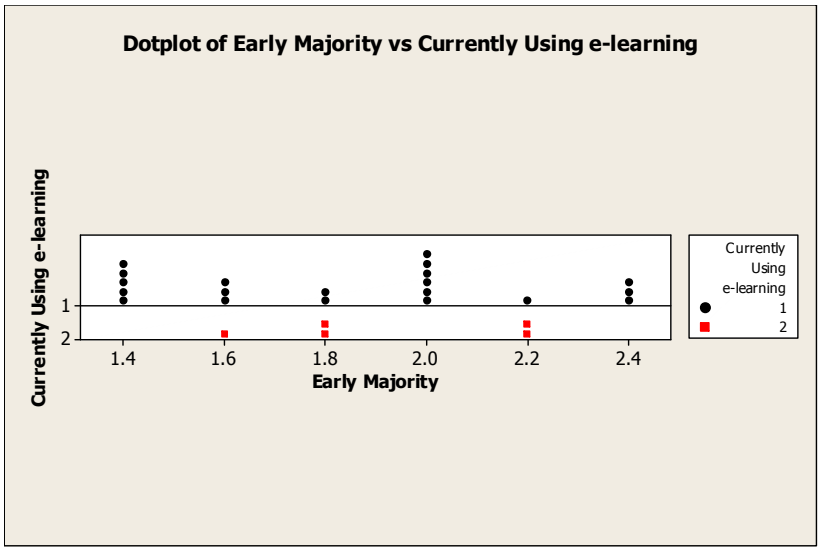

Figure 5-18 Dot plot for Early Majority variable

Figure 5-19 shows that banks that are using e-learning for anti-money laundering training scored very low results for the Late Majority category.

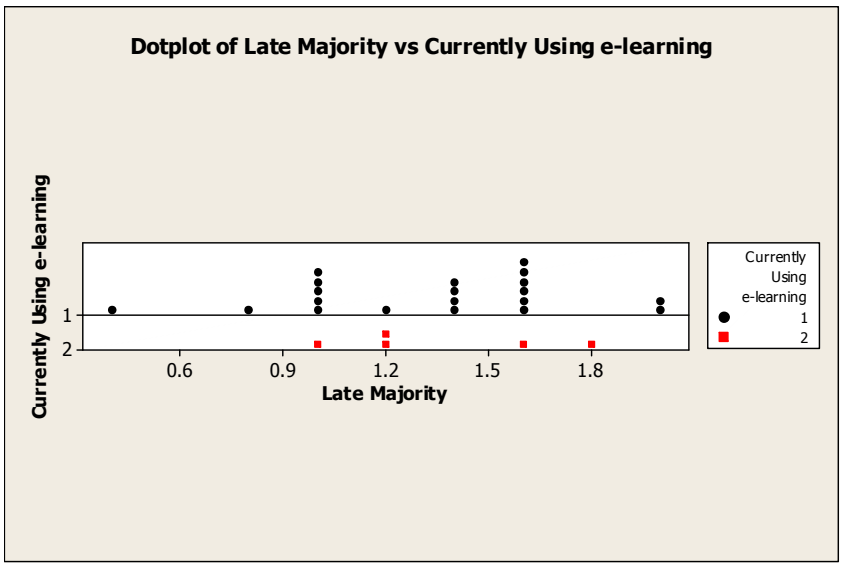

Figure 5-19 Dot plot for Late Majority variable

Figure 5-20 shows that banks that are using e-learning for anti-money laundering training score very low results as Laggards. Hence these banks might fall under the Innovators category or the Early Adopters category.

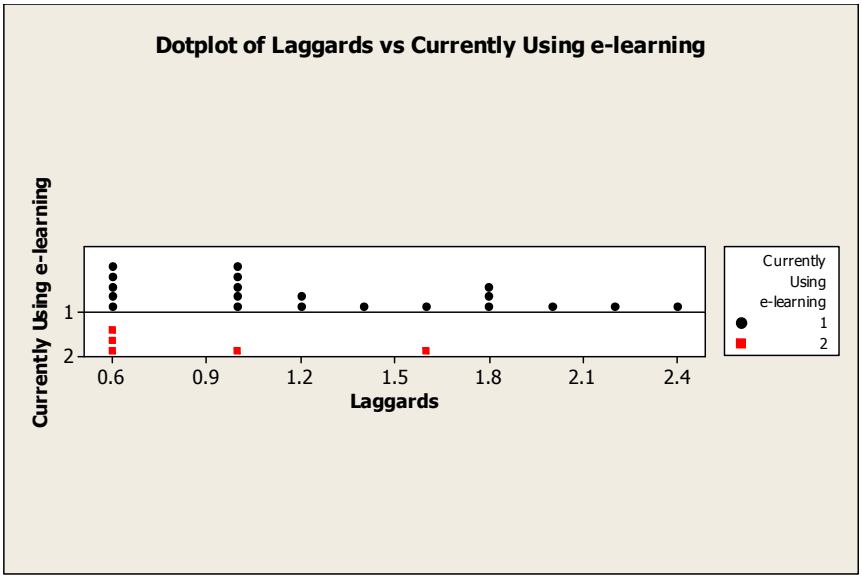

Figure 5-20 Dot plot for Laggards variable

5.2.4.2 Binary Logistic Regression

In order to determine the causal relationship between Banks Categories and Adoption of e-learning Binary Logistic Regression (BLR) [42] was carried out on each of the variables in the survey. Binary logistic regression is a technique for predicting the mean value of a binary response variable as a function of one or more covariates. This is used to determine factors that affect the presence or absence of a characteristic when the dependent variable has two levels. The result of the analysis revealed that there is no causal relationship between the Banks Categories (Innovators (p-value = 0.919), Early Adopters (p-value = 0.719), Early Majority (p-value = 0.587), Late Majority (p-value = 0.713) and Laggards (p-value = 0.235)) and the Adoption of e-learning.

5.3 Summary of the chapter

This chapter discusses in-depth the analysis of the data and answers the research questions. The analysis indicates that there were no difference in e-learning adoption between the national and the multinational banks. Also, various factors were investigated to distinguish between the banks that use e-learning and the banks that don't use e-learning. Since it was difficult to find something common between the groups, K-means was used to cluster the data and examine the adoption factors.

Chapter 6
Conclusion

This research studies the use of e-learning for anti-money laundering (AML) among banks in UAE. The primary research objective is to develop a framework for banks to consider when formulating strategic plans for a successful diffusion of e-learning as a technology within their organizations. Specifically, this exploratory research examines various factors affecting the adoption and utilization of e-learning for anti-money laundering training in banks in the UAE. This research uses a qualitative research approach through a questionnaire to conduct the investigation. This research has some limitation that need to be acknowledged; that is the sample size of the data is small since the number of banks operating in UAE is small.

A review of the literature suggested that available resources and management support and follow up are important variables for the adoption of IT/ICT, where these variables showed no significant in this analysis. Moreover, lack of existing infrastructure, lack of commitment from top management, low level of knowledge and skills and need to train intended users influenced the adoption. These results are consistent with this study where these factors are considered in the E-learning Readiness variable.

The study shows that most Innovation Characteristics (Relative Advantage, Compatibility, Triability and Observability), Organization Characteristics and Environmental Characteristics of the banks do not seem to have a significant impact on the adoption of e-Learning. However, the Complexity and E-Learning Readiness variables appeared to be the most useful factor to not only separate the banks that used e-Learning versus those that did not but to also measure the adoption characteristics of banks in UAE.

On the other hand, in the literature it was found that Innovation Characteristics have a relationship to the innovation adoption. So, users are more likely to use the technology that has a high Relative Advantage. However, in this research Relative Advantage seem to have no effect on the adoption of the e-learning innovation. Further, the literature indicates that Compatibility has a positive influence on the adoption, but the analysis showed that this variable has no influence in the adoption as well. Furthermore, reviewing the literature showed that technology attributes such as speed, reliability, accessibility and top management support and allocation of adequate resources for technology investment have influenced the adoption. Similarly, this research showed that speed, reliability and accessibility which are part of the E-learning Readiness variable, have a significant impact on the adoption. However, top management support was not significant in the analysis.

Accordingly, the primary and important research finding is that only two factors affect the use of e-learning for anti-money laundering in UAE banks and these factors are Complexity and E-learning Readiness. To elaborate more on the Complexity factor, it is concerned with the ease of using, learning, and implementing the innovation. In the context of our sample, e-Learning is relatively new to the banking industry in UAE and at this stage they may be unfamiliar with it. As such, the senior management may adopt a number of strategies to assist the bank's perceptions during this initial phase including increased time for professional development, the hiring of competent e-Learning resource developers and experts, and the provision of adequate user friendly infrastructure to facilitate the implementation and usage process.

The E-Learning Readiness factor appeared to be the most useful variable to measure the adoption of the technology in UAE banks. As such, the bank's management may adopt a number of strategies to assist the bank's perceptions during this initial phase including increased time for professional development, the hiring of competent e-Learning resource developers and experts, and the provision of adequate user friendly infrastructure to facilitate the implementation and usage process. Form the banking perspective; it is important to set-up a human-support system that will back up the e-learning adoption in the organization. Although e- Learning helps to decrease costs in training function, it requires a significant investment to initialize and be maintained and the bank's management should be aware of this matter.

These results suggest that both local and multi-national banks in the UAE are at fairly early stages of e-Learning adoption for training. The banks that are not adopting e-Learning are either not ready for e-Learning or perceive the introduction of e-Learning to be a complex and cumbersome process. Consequently, this exploratory study using survey data indicates that the banks surveyed, are, overall, not ready for e-Learning and especially for AML, since they need to improve themselves, particularly in the area of human resources, management, planning, budgeting, and the infrastructure, in order to be able to successfully implement e-Learning. In specifics, the contribution of the thesis is to develop a complete model for studying diffusion of e-learning for anti-money laundering training in the banking industry that includes factors from multiple perspectives. Then apply the survey instrument to examine the factors that affects the adoption of e-learning for anti-money laundering training in UAE banks.

This survey can be used as a starting point for discussing the readiness and effectiveness of e-Learning in UAE banks and the improvements needed to launch and maintain a successful e-Learning initiative. Moreover, if the sample size was large enough then it might provide more reliable and verifiable data on its E-Learning Readiness. Additionally, a factor analysis of the survey might also be beneficial if the required participant size can be achieved.

This thesis develops a model for investigating the diffusion of e-Learning technologies in the banking sector. The model incorporates factors from a host of theories including Innovation Characteristics (Relative Advantage, Compatibility, Complexity, Triability and Observability), Organization Characteristics (Top Management Support, Championship, Centralization, Formalization, Internal Influence, External Influence and Organization Slack), Environmental Characteristics (External Pressure, Competition and Coercive Influence), E-learning Readiness (measures the readiness of the organization in terms of technology readiness, resources, cost and management), Stages for Anti-money laundering (measure the application of AML in the banks), Banks Categories (Innovators, Early Adopters, Early Majority, Late Majority and Laggards) and Degree of Adoption.

In conclusion, this thesis makes two contributions. First, a detailed model incorporating a large number of factors to study the diffusion of e-Learning innovations in the banking sector is developed. Secondly, this model has been applied to banks in the UAE to determine the characteristics of factors that have led to the adoption of this technology.

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Appendix A – Survey Questionnaire

Introduction

E-learning uses information and communications technologies to typically deliver training through the intra- or internet. E-learning is increasingly a preferred methodology to train employees. Many institutions are using e-learning to train employees who must deal with regulations and market conditions that differ from one nation to another. For example, Credit Suisse Financial Services is using TopClass to provide compliance training for 50,000 employees.

The objective of this survey is to determine the extent to which banks in the UAE are using e-learning to address the regulatory compliance issues of anti-money laundering. Your participation is voluntary but vital. All responses will be kept anonymous and confidential. The names of institutions or individuals will not be revealed in any public document.

The results of this survey will be shared with all survey participants. These results should help your institution benchmark itself against others in region with respect to anti-money laundering compliance.

This survey will take approximately **20** minutes of your time. Thank you for help.

Q1.1) What is your role in the bank?

1. Management
2. Senior executive
3. Consultant
4. Compliance officer
5. HR Manager
6. Training Manager

Q1.2) How long have you worked for this bank?

_____

Q1.3) My job function is directly related to training in the bank.

- Yes No

Q1.4) My job function is directly related to establishing anti-money laundering compliance in the bank.

- Yes No

Q1.5) Does your organization use e-learning?

- Yes No

If "No" then skip to Q1.11

Q1.6) What year did your organization begin to use e-learning courses?

- Pre-2000
- 2000
- 2001
- 2002
- 2003
- 2004
- 2005
- 2006

Q1.7) Please check one of the following statements:

- **Our bank does not use a Learning Management System (LMS).**
- **Our bank uses an internally installed LMS.**
- **Our bank uses a hosted LMS.**
- **Don't know**

For each statement, please indicate an answer using a 1-5 scale where (5) is you would "strongly agree" and (1) is you would "strongly disagree" (3) is you have "no opinion" or you are "neutral".

Q1.8) Our bank develops most of the e-learning content internally (as opposed to buying off-the-shelf).

strongly disagree				strongly agree
1	2	3	4	5

Q1.9) Our bank outsource the development of customized e-learning content.

strongly disagree				strongly agree
1	2	3	4	5

Q1.10) Our bank's Learning Management System is tied to the Human Resource Management System to allow managers to track courses being taken by their employees.

strongly disagree				strongly agree
1	2	3	4	5

Q1.11) Our bank is aware that e-learning has been used extensively to deliver anti-money laundering compliance training in the banking sector.

strongly disagree				strongly agree
1	2	3	4	5

Q1.12) Our bank is intrigued and would like to explore the use of e-learning to deliver anti-money laundering compliance training.

strongly disagree				strongly agree
1	2	3	4	5

Q1.13) Our bank has experimented with using e-learning to deliver anti-money laundering compliance training.

strongly disagree				strongly agree
1	2	3	4	5

Q1.14) After evaluating e-learning for anti-money laundering training, our bank has decided to adopt the technology.

- Yes No

If you answered "No", please briefly describe the reasons behind the decision not to adopt this technology:

If you answered "No", then SKIP TO Q2.1

Q1.15) When did your organization start using e-learning for anti-money laundering training?

- 2006
- 2005
- 2004
- 2003
- 2002
- 2001
- 2000
- Before 2000

Q 1.16) Our e-learning system allows a manager or compliance manager to track the amount of anti-money laundering training taken by each bank employee.

strongly disagree				strongly agree
1	2	3	4	5

Q2.1) Bank's management typically show resistance towards adoption of new IT technology or training program until they are sure that it will be successful.

strongly disagree				strongly agree
1	2	3	4	5

Q2.2) Bank's management is generally cautious about introducing new IT technology in the bank.

strongly disagree				strongly agree
1	2	3	4	5

Q2.3) Bank's management is willing to adopt new IT technology but is not willing to be a leader in the change process among other banks.

strongly disagree				strongly agree
1	2	3	4	5

Q2.4) Bank's management often uses other banks' experience of innovative uses of IT technology to gain more information and to make decisions.

strongly disagree				strongly agree
1	2	3	4	5

Q2.5) Bank's management is passionate with trying new IT Technologies.

strongly disagree strongly agree
1 2 3 4 5

Q2.6) Bank's management is innovative and eager to be the first to adopt new IT technologies.

strongly disagree strongly agree
1 2 3 4 5

Q2.7) Bank's management actively seeks out new IT innovations.

strongly disagree strongly agree
1 2 3 4 5

Q2.8) Bank's management often adopts new IT innovations and influences other banks to do so as well.

strongly disagree strongly agree
1 2 3 4 5

Q2.9) Bank's management is willing to follow the lead of other banks in adopting new IT innovations.

strongly disagree strongly agree
1 2 3 4 5

Q2.10) Bank's management is generally willing to adopt new IT technology but does not attempt to influence other banks to do so.

strongly disagree strongly agree
1 2 3 4 5

Q2.11) Bank's management is generally convinced of the advantage of using IT technology based on successful use by other banks.

strongly disagree strongly agree
1 2 3 4 5

Q2.12) The management in the bank is suspicious of using new IT technologies.

strongly disagree strongly agree
1 2 3 4 5

Q2.13) Bank's management is generally resistant to change.

strongly disagree strongly agree

1 2 3 4 5

Q3.1) E-learning is more effective when compared to other forms of education/training in addressing the regulatory compliance issues of anti-money laundering.

strongly disagree strongly agree
1 2 3 4 5

Q3.2) E-learning for anti-money laundering training improves the quality of training when compared with traditional training methods.

strongly disagree strongly agree
1 2 3 4 5

Q3.3) E-learning for anti-money laundering training is more convenient than the traditional training methods because of 24x7 availability.

strongly disagree strongly agree
1 2 3 4 5

Q3.4) E-learning for anti-money laundering training is cheaper than traditional training/education.

strongly disagree strongly agree
1 2 3 4 5

Q3.5) E-learning for anti-money laundering is better received by Bank's employees than the traditional training/education.

strongly disagree strongly agree
1 2 3 4 5

Q4.1) Using e-learning for anti money laundering training is consistent with the bank's existing values.

strongly disagree strongly agree
1 2 3 4 5

Q4.2) Using e-learning for anti-money laundering training satisfies bank's current training needs.

strongly disagree strongly agree
1 2 3 4 5

Q4.3) Using e-learning for anti-money laundering training is consistent with bank's past experiences with use of Information Technology.

strongly disagree strongly agree

1 2 3 4 5

Q4.4) Using e-learning for anti-money laundering training will fill specific needs of employees who need training on anti-money laundering compliance.

strongly disagree strongly agree

1 2 3 4 5

Q4.5) Using e-learning for anti-money laundering training fits well with the existing work practices of bank's employees.

strongly disagree strongly agree

1 2 3 4 5

Q4.6) Using blended learning involved both traditional and e-learning for anti-money laundering training will be preferred by bank's employees over use of traditional training methods alone.

strongly disagree strongly agree

1 2 3 4 5

Q5.1) Implementing e-learning to accomplish anti-money laundering compliance training is easy.

strongly disagree strongly agree

1 2 3 4 5

Q5.2) Using e-learning makes it easier for the bank to fulfill the anti-money laundering training compliance.

strongly disagree strongly agree

1 2 3 4 5

Q5.3) It fairly clear how e-learning can be used to conduct anti-money laundering training.

strongly disagree strongly agree

1 2 3 4 5

Q5.4) It is easy for bank employees to learn how to use e-learning for anti money laundering training and compliance.

strongly disagree strongly agree

1 2 3 4 5

Q6.1) It is easy for the bank to try various e-learning applications for anti-money laundering training before making a commitment to buying or implementing.

strongly disagree				strongly agree
1	2	3	4	5

Q6.2) The bank employees find it easy to use e-learning for anti-money laundering training.

strongly disagree				strongly agree
1	2	3	4	5

Q6.3) Rolling out a training program based on e-learning takes very little time.

strongly disagree				strongly agree
1	2	3	4	5

Q7.1) Bank's management has learned new ways of using e-learning for anti-money laundering training from competitive banks.

strongly disagree				strongly agree
1	2	3	4	5

Q7.2) Bank's management believes that using e-learning for anti-money laundering training may increase its social prestige.

strongly disagree				strongly agree
1	2	3	4	5

Q7.3) Employing e-learning for anti-money laundering training will improve an employee's or a manager's image within the bank.

strongly disagree				strongly agree
1	2	3	4	5

Q7.4) People who use e-learning for anti-money laundering training have a high profile in the bank.

strongly disagree				strongly agree
1	2	3	4	5

Q7.5) The use of e-learning for anti-money laundering is visible to everyone in the bank.

strongly disagree				strongly agree
1	2	3	4	5

Q7.6) The use of e-learning for anti-money laundering is visible to others outside the bank.

strongly disagree strongly agree

1 2 3 4 5

Q8.1) Senior management pressure is one of the key reasons for adoption of new IT innovations in our bank.

strongly disagree strongly agree

1 2 3 4 5

Q8.2) Top Management has a positive attitude towards using information technology in general and use of e-learning in specific.

strongly disagree strongly agree

1 2 3 4 5

Q8.3) Top and mid level management thinks positively toward information technology interventions in daily/routine tasks.

strongly disagree strongly agree

1 2 3 4 5

Q8.4) Top management in the bank actively participates in establishing a vision and formulating strategies for utilizing information technology systems.

strongly disagree strongly agree

1 2 3 4 5

Q8.5) My immediate supervisor encourages me to learn about and/or apply new IT technologies.

strongly disagree strongly agree

1 2 3 4 5

Q8.6) There is a well-placed champion who facilitates the acceptance and implementation of information technology initiatives (e.g., introduction of e-learning for anti-money laundry training) in the bank.

strongly disagree strongly agree

1 2 3 4 5

Q8.7) Top management in the bank typically assigns project champions (focal point) for overseeing the utilization of information technology in the bank.

strongly disagree strongly agree

1 2 3 4 5

Q8.8) The bank's training needs and delivery solutions (including those for e-learning) are centrally planned.

strongly disagree strongly agree

1 2 3 4 5

Q8.9) The anti-money laundering compliance officer (or equivalent role) has the authority to chose and select different training modalities for anti-money laundering.

strongly disagree strongly agree

1 2 3 4 5

Q8.10) Our bank has a long bureaucratic process for making decisions about adoption of a technological intervention such as the use of e-learning for anti-money laundering training.

strongly disagree strongly agree

1 2 3 4 5

Q8.11) Our bank has a culture and tradition of using information technology whenever appropriate.

strongly disagree strongly agree

1 2 3 4 5

Q8.12) Our bank feels that it will be left behind if it does not adopt technologies such as e-learning.

strongly disagree strongly agree

1 2 3 4 5

Q8.13) Our employees typically have the free time to attend workshops and other traditional training events.

strongly disagree strongly agree

1 2 3 4 5

Q8.14) Our bank has enough resource to invest in a long-term e-learning platform to handle the anti-money laundering compliance training.

strongly disagree strongly agree

1 2 3 4 5

Q9.1) There is pressure from our industry to use technology to address anti-money laundering compliance.

strongly disagree strongly agree

1 2 3 4 5

Q9.2) I feel pressured by my colleagues and peers to be effective in using IT technology in establishing anti-money laundering compliance in the bank.

strongly disagree strongly agree
1 2 3 4 5

Q9.3) Not using e-Learning for anti-money laundering training may have an impact on our bank's competitive edge.

strongly disagree strongly agree
1 2 3 4 5

Q9.4) The bank is under pressure from the government and the international compliance agencies to implement anti-money laundering training efficiently and in a timely manner.

strongly disagree strongly agree
1 2 3 4 5

Q10.1) What is the <u>fastest</u> external connection to the Internet your bank has?

- Not connected to the Internet
- Dial-up at 14.4 Kbps or less
- Dial-up at 28.8 Kbps
- Dial-up at 56 Kbps
- Dial-up - not sure of speed
- ISDN at 64 Kbps
- ISDN at 128 Kbps
- ISDN at 256 Kbps
- ISDN - not sure of speed
- Dedicated 56 Kbps
- Business 1
- Frame Relay
- DSL
- Wireless
- Other *(Please specify: _____)*

Please circle a number that best reflects your organization.

	0 1	**2 3**	**4 5**
Q10.2) How well is the bank using (Internet and Intranet)	Few, if any of our core business processes are web-enabled.	One or more core business functions are web-based, but most internal work	Most core business functions are web-enabled, and most internal work and

technology to run its business?		and communication is done offline.	communication, even by senior management, is online.
	0 1	**2 3**	**4 5**
Q10.3) How prepared (skills, knowledge, motivation) is your workforce to compete and win in the high-tech, new economy?	Most of the workforce is new to the new economy. Many are not computer literate. We have a lot of work to do.	Our workforce is becoming more high-tech all the time. However, there are still significant numbers of people who are not prepared.	Our workforce is quite well prepared to succeed in the new economy. I would consider us technologically advanced.
	0 1	**2 3**	**4 5**
Q10.4) How the bank does define "e-learning?"	We tend to define it mostly in terms of traditional Computer Based Training; new ideas about e-learning are hard to sell.	E-Learning is new to us so there is an opportunity and an openness to broadly define e-learning; we're working on it.	We have a broad-based definition of e-learning that includes alternatives such as knowledge management, performance support and other web-enabled distance learning approaches.
	0 1	**2 3**	**4 5**
Q10.5) How will the bank overcomes any bad prior experiences you and others have had with technology based learning?	We have a lot of convincing to do, there's a lot of bad feeling regarding prior experiences; we tend to be blamed for past disappointments. Some people are using past experiences as reason for not getting into e-learning.	We haven't done much in technology-base learning so there's very little prior experience; there doesn't appear to be any feelings one way or the other.	We understand that this is a marathon, not a sprint. Our clients and stakeholders look at prior bad experiences as lessons learned and we try to improve over time.
	0 1	**2 3**	**4 5**
Q10.6) How much access do people have to the web (anyone, any time, anywhere)?	Access to the web is a problem; we are still building out our infrastructure.	We are working with I.T., the CIO and business leaders to assure that people can access the web for	We have already attained almost universal access in office, field, home environments.

		learning as well as key business applications.	
	0 1	**2 3**	**4 5**
Q10.7) Do you differentiate between instructional needs (training) and informational needs (knowledge management), and do you make the right decisions about when to use each?	We don't think of informational needs as within our responsibility; we have a focus on instruction only.	We are beginning to become involved in the delivery of information as a form of learning; it's difficult, but we are making some progress in selling this concept.	We are actively involved in both instructional and informational programs; we are constantly evaluating learning needs to determine which is most appropriate for a given situation.
	0 1	**2 3**	**4 5**
Q10.8) What is the level of the bank's expertise in instructional and information design?	Pretty weak. We have some people who have basic skills but these skills are neither widespread enough nor deep enough to make a fundamental impact.	Growing. We are aware of the increasing importance of these professional skills and we're spending the time and money to significantly upgrade our skills through hiring and/or retraining.	Strong. We have established a strong competency in these areas and are committed to maintaining state-of-the-art expertise in these fields.
	0 1	**2 3**	**4 5**
Q10.9) Is the bank ready to move beyond a predominant reliance on classroom training to a more balanced approach with e-learning?	We're struggling with this. In most cases, classroom learning is the default delivery approach. We still oversell e-learning to people who are predominately classroom focused.	We have demonstrated the viability of a combined e-learning and classroom strategy, but it's still a tough sell.	We have implemented a balanced approach between e-learning and classroom learning – our value is making the right decision.
	0 1	**2 3**	**4 5**
Q10.10) Does senior management support e-learning?	We don't have much access to or support from senior management regarding e-	We have access, but maintaining their interest and gaining long-term support for this new	We have access and Growing management commitment; we work on it every

	learning. They don't appear To be interested.	approach to learning is difficult.	day.
	0 1	**2 3**	**4 5**
Q10.11) Does the bank have a Change management plan for introducing e-learning?	We have no change management plan; unfortunately, we tend to move unsystematically from event to event.	We are developing a change management plan, but we're not sure if it will work or if it's complete.	Change management is an integral part of our deployment strategy.
	0 1	**2 3**	**4 5**
Q10.12) Can the bank demonstrate the business benefits of e-learning?	Not really; we are way behind in demonstrating business benefits. We tend to hype the technology and multimedia elements rather than performance benefits. Our measurements are mostly "customer satisfaction" related.	We are working to demonstrate business benefits of e-learning, and we've made some progress in cost, quality, service and speed metrics. But there is a long way to go.	We have been successful in demonstrating business benefits of e-learning and are moving to scale up our capability in this area.
	0 1	**2 3**	**4 5**
Q10.13) Does the bank have a plan to help the training function reinvent itself for the digital age?	We don't really have a plan to change the training organization, although we know we need one.	We are building e-learning components within our organization, but haven't given much thought yet to helping our people change.	We are implementing both e-learning and change management strategies to help our people adapt to the changes that are coming.
	0 1	**2 3**	**4 5**
Q10.14) What is the climate in the bank to learning in alternative locations, especially the work site?	There is a great deal of resistance to learning at the work site. Many people do not view learning as important as work, or don't see how they're related.	There is an understanding that work and learning go hand-in-hand, and that learning can take place anywhere. However, people still need support to find time to learn, free of interruptions.	We are moving quickly to a culture that accepts e-learning at the work site and we're working with employees and managers to create the right environment for learning to take place.

	0 1	2 3	4 5
Q10.15) Is the bank willing to allow e-learning to thrive, perhaps at the expense of some of the more traditional parts of the training organization?	We're willing to implement e-learning, but if it cuts too far into our classroom business, we will have to re-evaluate our classroom business is essential to our survival.	We're willing to implement e-learning only in areas that do not conflict with our classroom business.	We're well aware that e-learning will reduce our classroom business, and we're prepared to re-allocate our resources accordingly.
	0 1	**2 3**	**4 5**
Q10.16) How prepared is the bank to invest in, and incubate e-learning for several years in order to get it firmly established?	This will be a very difficult sell, as our bank's budgeting process is on an annualized basis. If we don't spend it in the year, we lose it.	We are working to set up a process that will fund e-learning on a multi-year basis, but we still have to convince senior management.	We have successfully restructured our budgeting process, with senior management support, to allow long-term funding of e-learning.
	0 1	**2 3**	**4 5**
Q10.17) How prepared is the bank to deal with a large and increasingly complex e-learning marketplace?	We've been primarily internally focused; we really don't know much about what's going on in the industry.	We've been purchasing products and services from the e-learning industry for years, but mostly from our traditional vendors. We really need to update our industry knowledge.	We are devoting more time and resources to getting the most out of the increasingly sophisticated e-learning industry.
	0 1	**2 3**	**4 5**
Q10.18) Does the bank have a good handle on what it is buying in the e-learning marketplace – can it differentiate quality products and weed out redundancies?	Purchasing is haphazard and uncoordinated. We have no strategy for evaluating quality and avoiding redundancy. It's extremely difficult to even know who is buying what.	Everyone involved recognizes the need for better vendor management and more coordinated purchasing. We're just not there yet.	We have implemented an agreed upon approach to vendor relationships and purchasing, and we are achieving increased cost savings and experiencing less redundancy
	0 1	**2 3**	**4 5**
Q10.19) Is the	We're not prepared	We are	We have included

bank prepared to outsource its training functions and manage them externally so that it can concentrate its resources on more valuable areas?	to significantly outsource any of our major functions.	experimenting with outsourcing some of the bank's functions so that we can focus on more valuable areas.	outsourcing as a key component of our strategic plan – how we will manage the organization in the future.
	0 1	**2 3**	**4 5**
Q10.20) How committed are you, personally, to e-learning? Are you ready?	I really haven't paid much attention. Besides, I'm not totally convinced that this is the right way to go for our bank.	I believe this is the right way to go, but I don't have enough capability to move forward towards implementing an e-learning strategy.	I am totally committed to e-learning and have taken the time to educate myself with the major issues. I am ready to implement durable e-learning strategy.

Q11.1) Our bank requires us to report any suspicious client activities to the regulatory authority immediately?

strongly disagree strongly agree
1 2 3 4 5

Q11.2) Our bank has a written policy designed to combat money laundering?

- Yes No

Q11.3) Our bank's written policy specifies internal controls (e.g.: inspection or investigation) and procedures such as Know Your Customer (KYC), operations analysis and suspicious activity report (SAR)

strongly disagree strongly agree
1 2 3 4 5

Q11.4) Our bank has an employee training program for the prevention of money laundering.

strongly disagree strongly agree
1 2 3 4 5

Q11.5) Our bank has a Money Laundering Reporting Officer (or similar role) responsible for coordinating and monitoring anti-money laundering arrangements.

strongly disagree strongly agree

1 2 3 4 5

Q11.6) Our bank enforces a mandatory anti-money laundering training program for all management and staff carried out on a regular basis.

strongly disagree strongly agree
1 2 3 4 5

Q11.7) Our bank has an established process to periodically test the adequacy of AML procedures and policies.

strongly disagree strongly agree
1 2 3 4 5

Q11.8) Our bank monitors and reports suspicious transactions in accordance with applicable regulations.

strongly disagree strongly agree
1 2 3 4 5

Q11.9) Our bank monitors transactions and accounts in the name of suspected terrorists and/or terrorist organizations and reports them to the competent authorities.

strongly disagree strongly agree
1 2 3 4 5

Q11.10) Our bank has implemented an independent testing program that is designed to assess our bank's compliance with international anti-money laundering and anti-terrorist financing policies and procedures and relevant laws regulations.

strongly disagree strongly agree
1 2 3 4 5

Q11.11) Our bank's board and senior management consider AML to be a high priority and do they actively demonstrate their commitment to the bank's AML effort.

strongly disagree strongly agree
1 2 3 4 5

Q11.12) Our bank is confident that our suspicious activity report (SAR) processes are appropriate for the scale of internal and external reporting that are now in place.

strongly disagree strongly agree
1 2 3 4 5

Q11.13) The bank regularly assesses the quality, impact, and effectiveness of AML training for staff.

strongly disagree				strongly agree
1	2	3	4	5

Q11.14) All of our staff is trained in anti-money laundering compliance.

strongly disagree				strongly agree
1	2	3	4	5

Q11.15) Our bank provides tailored training for specific groups in the bank (as opposed, to generic information for all).

strongly disagree				strongly agree
1	2	3	4	5

Q11.16) Our bank's senior management has undertaken the AML training alongside other staff members.

strongly disagree				strongly agree
1	2	3	4	5

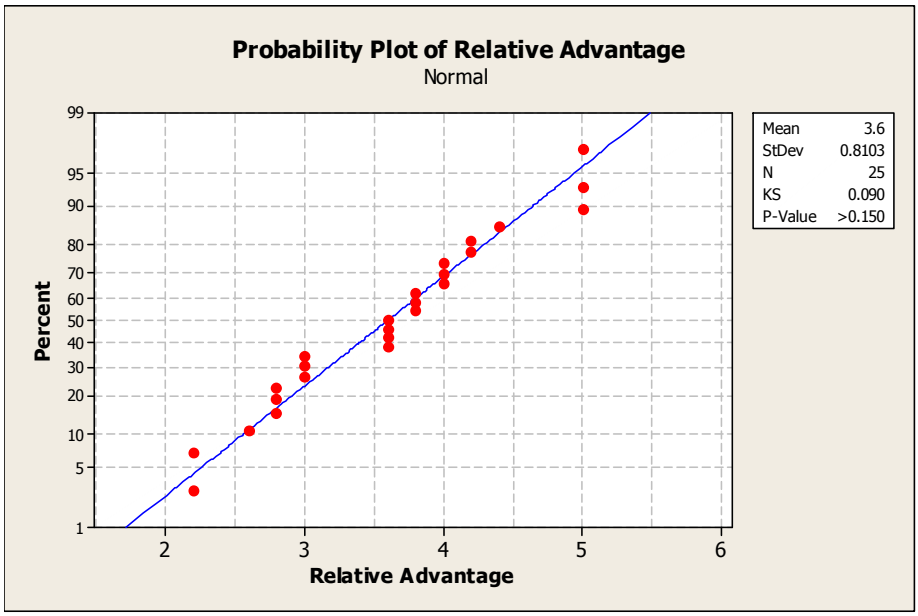
Q11.17) Our bank periodically updates the content of its AML training.

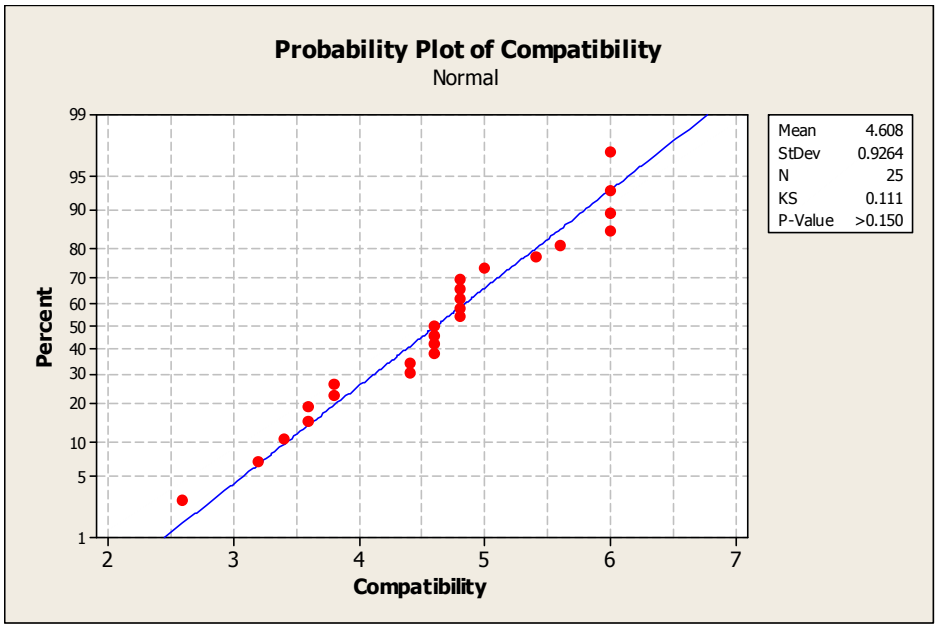
strongly disagree				strongly agree
1	2	3	4	5

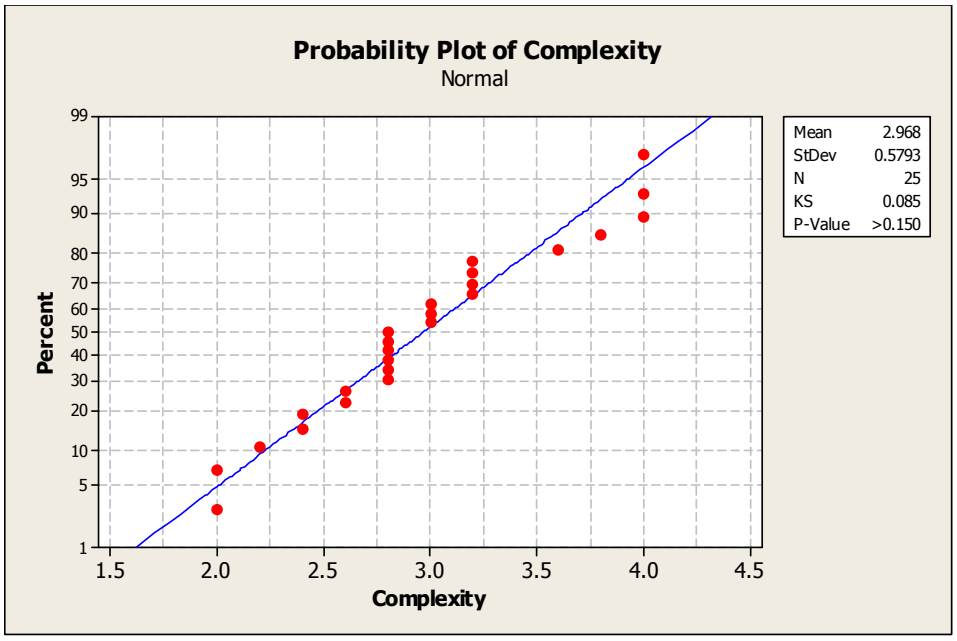
Appendix B

Appendix B – 1: Normality Test

- **Innovation Characteristics**



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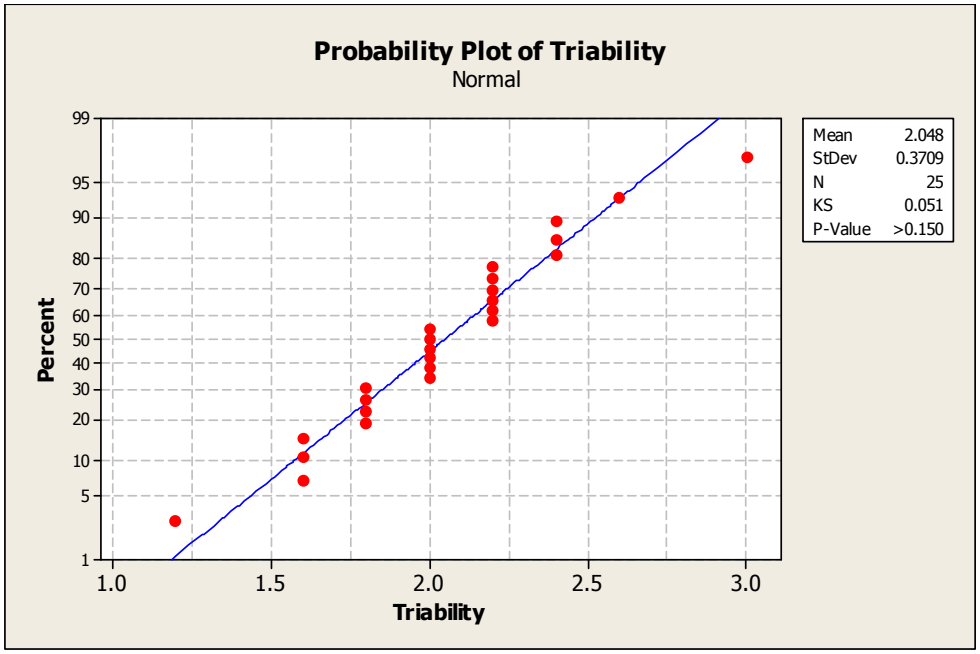
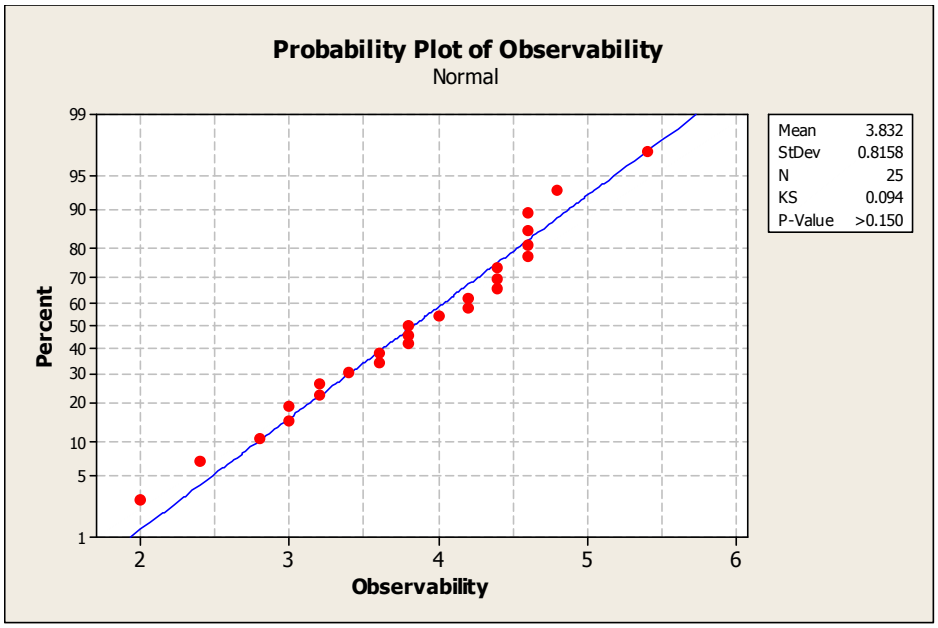
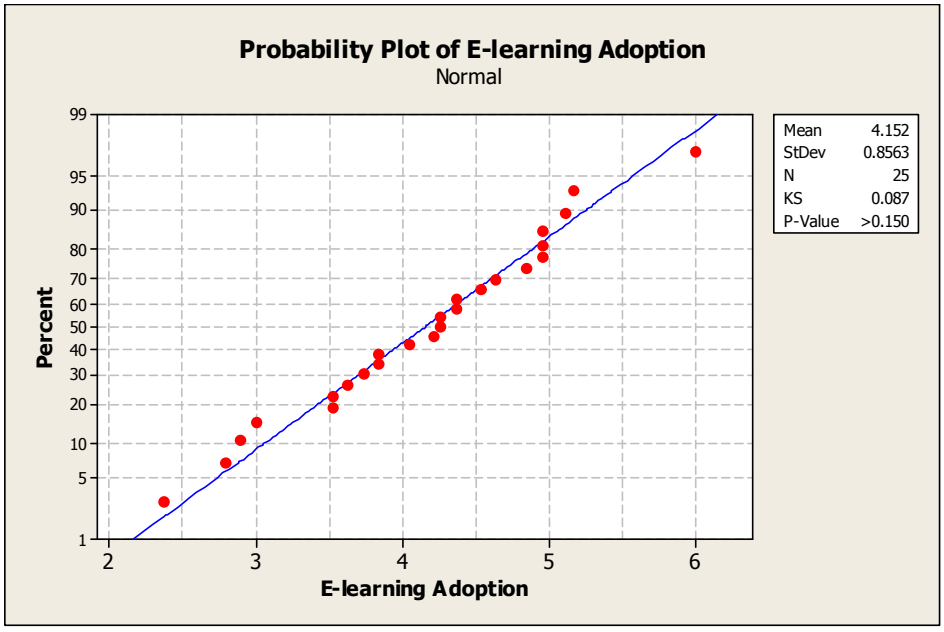
Normal
Percent
Complexity
Mean 2.968
StDev 0.5793
N 25
KS 0.085
P-Value >0.150

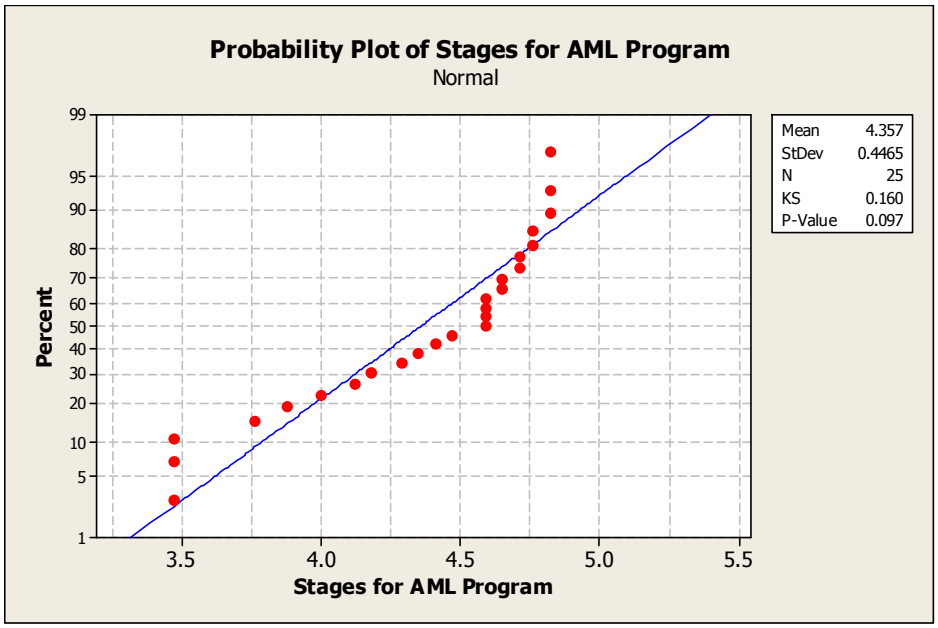

Probability Plot of Triability
Normal
Percent
Triability
Mean 2.048
StDev 0.3709
N 25
KS 0.051
P-Value >0.150



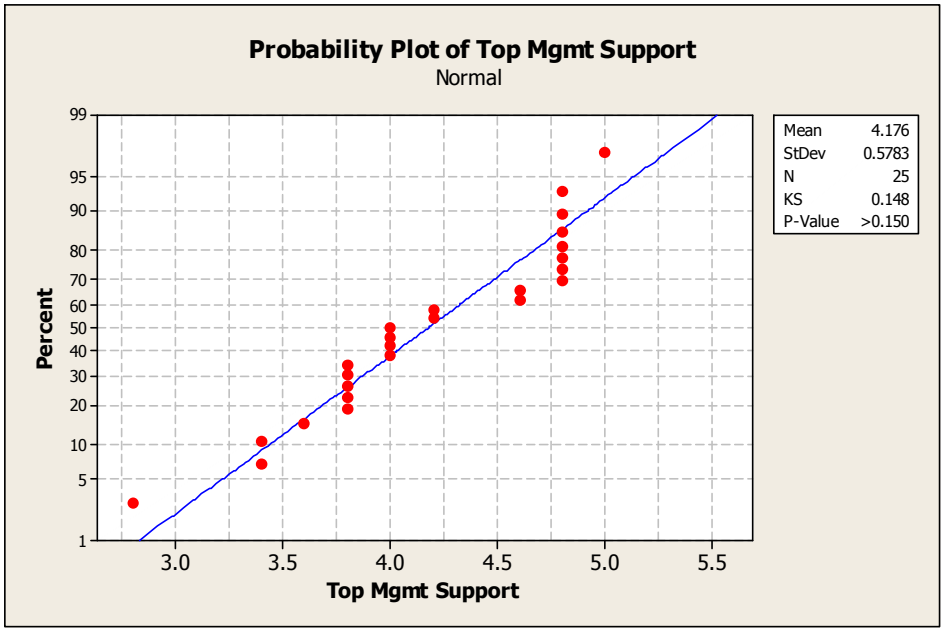
- **E-learning Adoption**

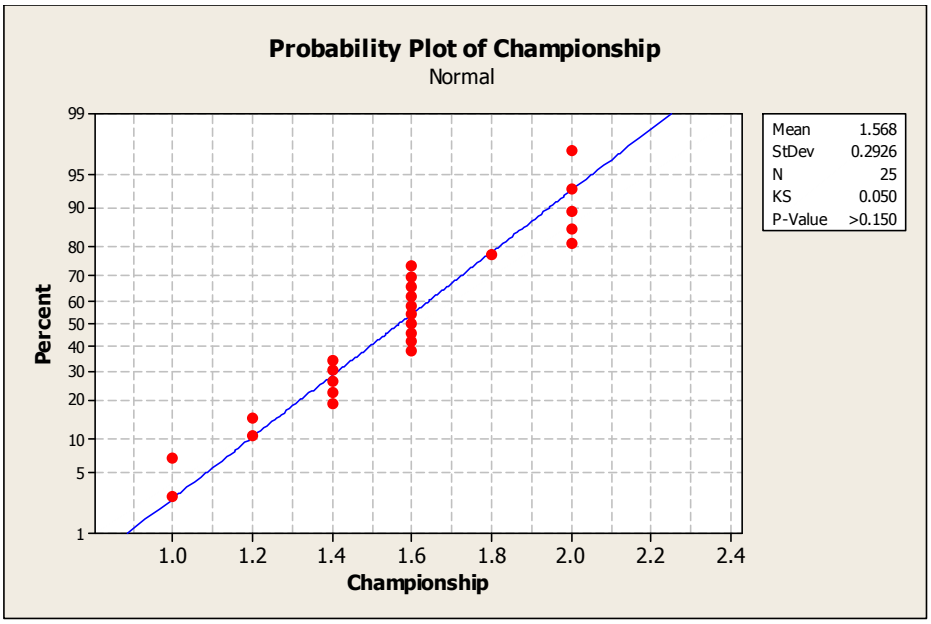


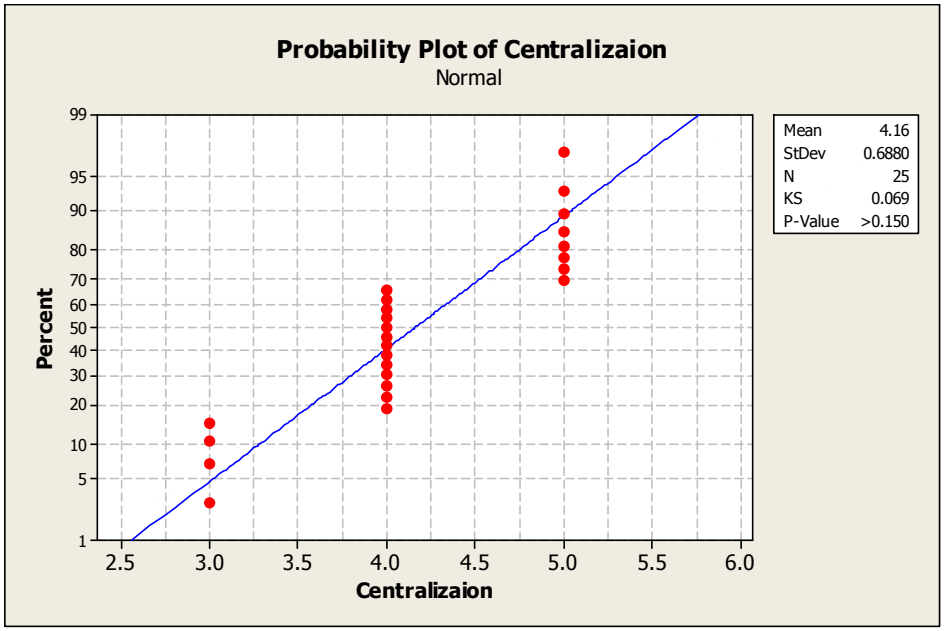
- **Stages for AML Program**

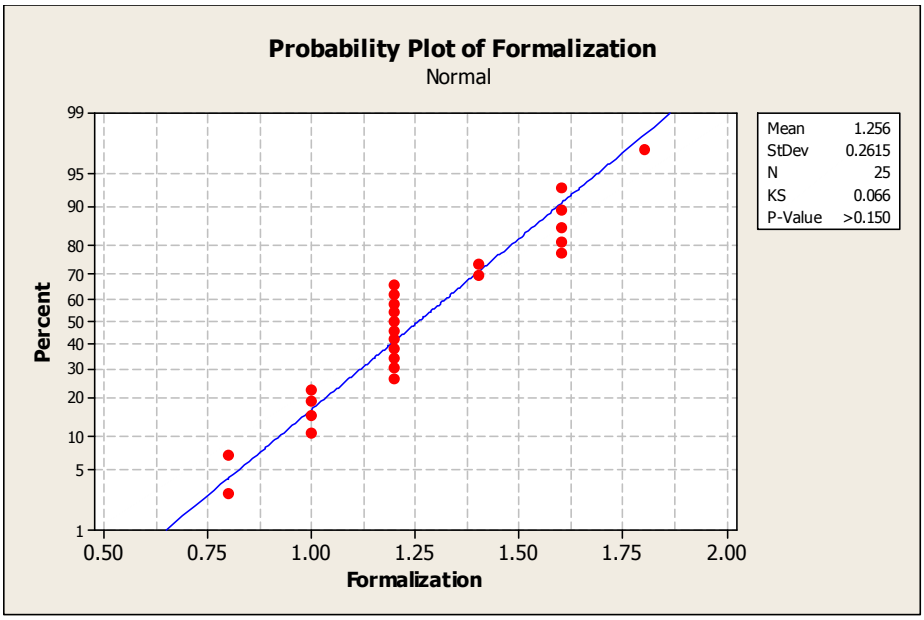


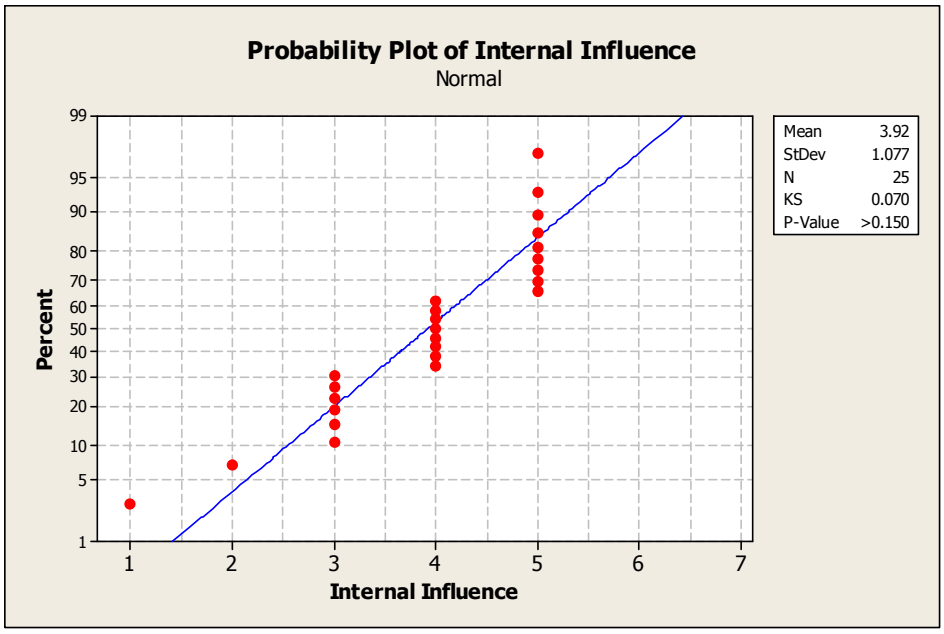
- **Organization Characteristics**

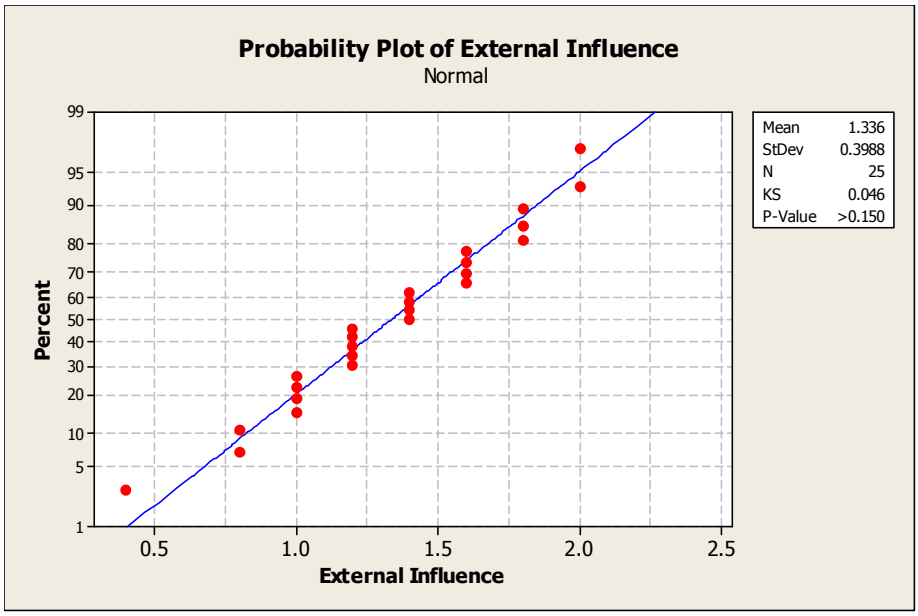


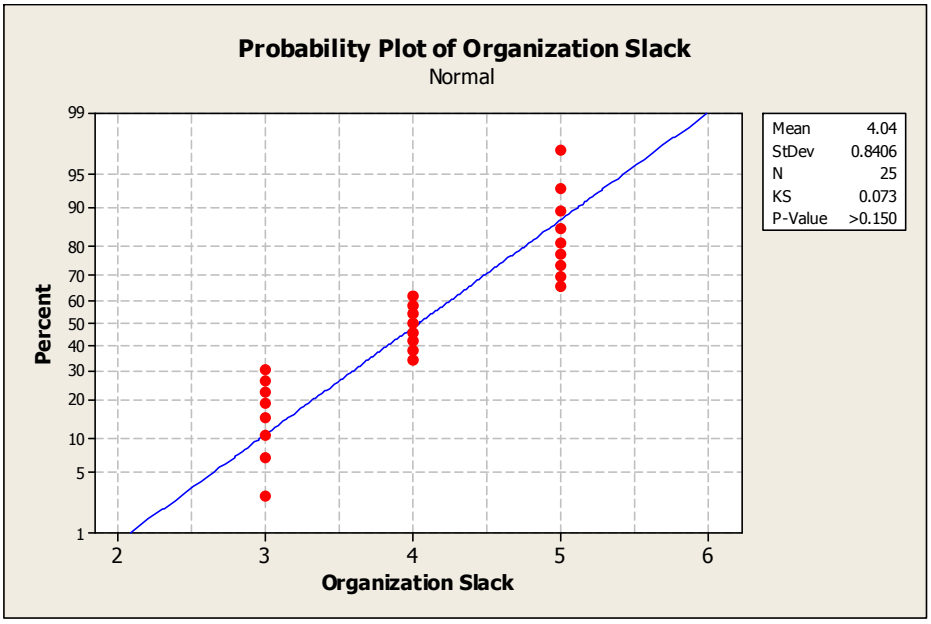

Probability Plot of Championship
Normal
Percent
Championship
Mean 1.568
StDev 0.2926
N 25
KS 0.050
P-Value >0.150


Probability Plot of Centralizaion
Normal
Percent
Centralizaion
Mean 4.16
StDev 0.6880
N 25
KS 0.069
P-Value >0.150

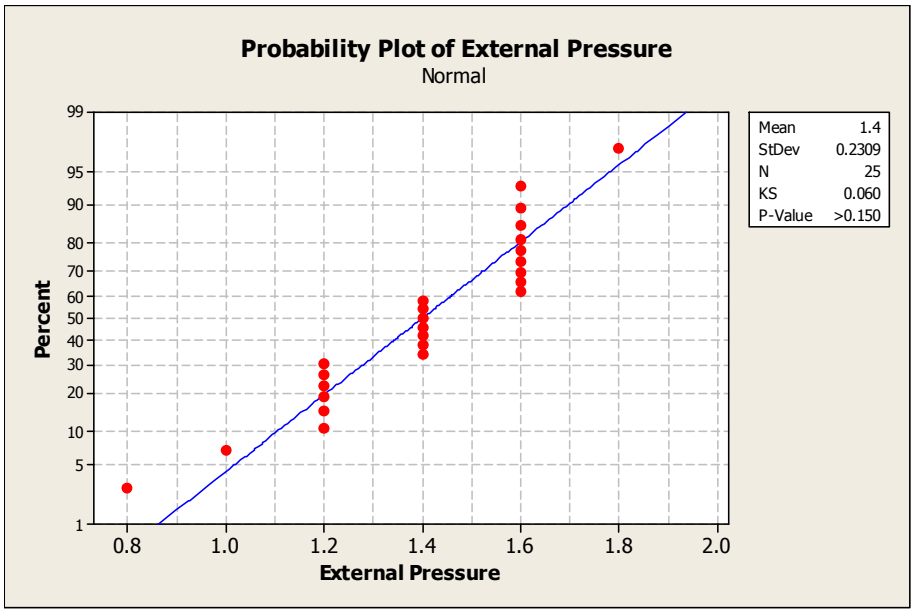

Probability Plot of Formalization
Normal
Mean 1.256
StDev 0.2615
N 25
KS 0.066
P-Value >0.150
Percent
Formalization
99
95
90
80
70
60
50
40
30
20
10
5
1
0.50
0.75
1.00
1.25
1.50
1.75
2.00

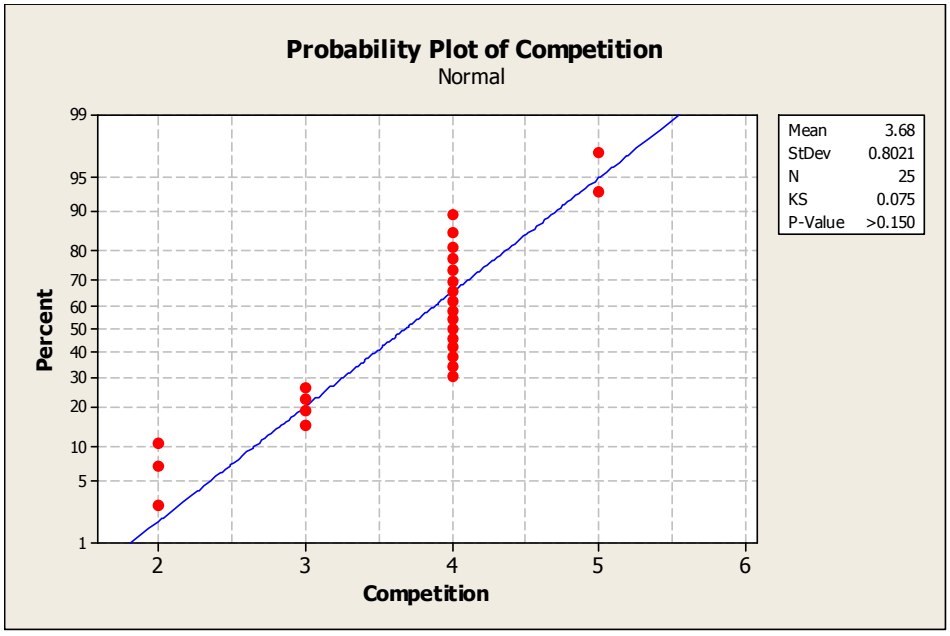

Probability Plot of Internal Influence
Normal
Mean 3.92
StDev 1.077
N 25
KS 0.070
P-Value >0.150
Percent
Internal Influence
99
95
90
80
70
60
50
40
30
20
10
5
1
1
2
3
4
5
6
7

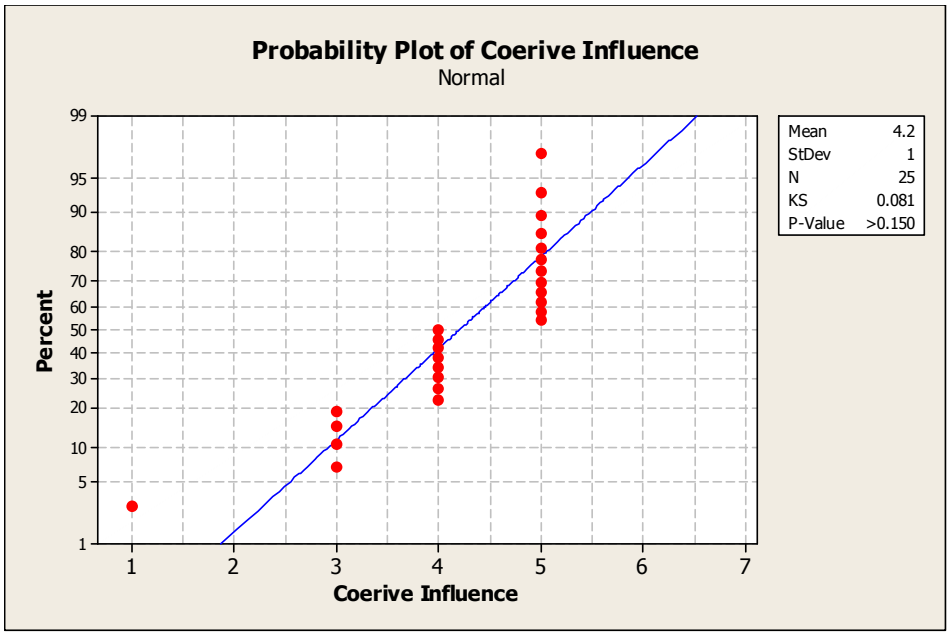

Probability Plot of External Influence
Normal
Percent
External Influence
99
95
90
80
70
60
50
40
30
20
10
5
1
0.5
1.0
1.5
2.0
2.5
Mean 1.336
StDev 0.3988
N 25
KS 0.046
P-Value >0.150


Probability Plot of Organization Slack
Normal
Percent
Organization Slack
99
95
90
80
70
60
50
40
30
20
10
5
1
2
3
4
5
6
Mean 4.04
StDev 0.8406
N 25
KS 0.073
P-Value >0.150

- **Environmental Characteristics**






Probability Plot of Coerive Influence
Normal
Percent
99
95
90
80
70
60
50
40
30
20
10
5
1
1
2
3
4
5
6
7
Coerive Influence
Mean 4.2
StDev 1
N 25
KS 0.081
P-Value >0.150

Appendix B -2: Analysis o Variance (NB vs. MNB)

- **Innovation Characteristics**

One-way ANOVA: Relative Advantage versus Bank Nationality

```
Source             DF      SS     MS     F      P
Bank Nationality   1     0.471  0.471  0.69  0.414
Error              22    14.914  0.678
Total              23    15.385

S = 0.8234   R-Sq = 3.06%   R-Sq(adj) = 0.00%


                           Individual 95% CIs For Mean Based on
                           Pooled StDev
Level   N    Mean   StDev  -----+---------+---------+---------+----
1      13  3.7538  0.8333          (------------*-------------)
2      11  3.4727  0.8113  (-------------*--------------)
                           -----+---------+---------+---------+----
                              3.15      3.50      3.85      4.20

Pooled StDev = 0.8234
```

One-way ANOVA: Compatibility versus Bank Nationality

```
Source             DF      SS     MS     F      P
Bank Nationality   1     1.371  1.371  1.63  0.215
Error              22    18.547  0.843
Total              23  19.918

S = 0.9182   R-Sq = 6.88%   R-Sq(adj) = 2.65%


                           Individual 95% CIs For Mean Based on
                           Pooled StDev
Level   N    Mean   StDev  -----+---------+---------+---------+----
1      13  4.8615  0.9500              (-------------*------------)
2      11  4.3818  0.8784  (--------------*-------------)
                           -----+---------+---------+---------+----
                              4.00      4.40      4.80      5.20

Pooled StDev = 0.9182
```

One-way ANOVA: Complexity versus Bank Nationality

```
Source             DF     SS     MS     F      P
Bank Nationality   1    0.001  0.001  0.00  0.960
Error              22   8.024  0.365
Total              23   8.025

S = 0.6039   R-Sq = 0.01%   R-Sq(adj) = 0.00%


                           Individual 95% CIs For Mean Based on
                           Pooled StDev
Level   N    Mean   StDev    +---------+---------+---------+---------
1      13  2.9692  0.5936     (-----------------*-----------------)
2      11  2.9818  0.6161    (------------------*------------------)
```

```
                          +---------+---------+---------+---------
                        2.60      2.80      3.00      3.20

Pooled StDev = 0.6039
```

One-way ANOVA: Triability versus Bank Nationality

```
Source             DF     SS     MS     F      P
Bank Nationality   1    0.022  0.022  0.15  0.705
Error              22   3.217  0.146
Total              23   3.238

S = 0.3824   R-Sq = 0.67%   R-Sq(adj) = 0.00%


                           Individual 95% CIs For Mean Based on
                           Pooled StDev
Level   N    Mean   StDev  ---------+---------+---------+---------+
1      13  2.0308  0.4231  (--------------*--------------)
2      11  2.0909  0.3270    (---------------*---------------)
                           ---------+---------+---------+---------+
                                  1.95      2.10      2.25      2.40

Pooled StDev = 0.3824
```

One-way ANOVA: Observability versus Bank Nationality

```
Source             DF      SS     MS     F      P
Bank Nationality   1     0.018  0.018  0.02  0.877
Error              22    15.927  0.724
Total              23    15.945

S = 0.8509   R-Sq = 0.11%   R-Sq(adj) = 0.00%


                           Individual 95% CIs For Mean Based on
                           Pooled StDev
Level   N    Mean   StDev    +---------+---------+---------+---------
1      13  3.8000  0.8981    (-----------------*---------------)
2      11  3.8545  0.7904     (-----------------*-----------------)
                             +---------+---------+---------+---------
                           3.30      3.60      3.90      4.20

Pooled StDev = 0.8509
```

- **E-learning Readiness**

One-way ANOVA: E-learning Readiness versus Bank Nationality

```
Source             DF      SS     MS     F      P
Bank Nationality   1     0.135  0.135  0.17  0.680
Error              22    17.059  0.775
Total              23    17.194

S = 0.8806   R-Sq = 0.79%   R-Sq(adj) = 0.00%


                           Individual 95% CIs For Mean Based on
                           Pooled StDev
```

```
Level   N    Mean   StDev  -------+---------+---------+---------+--
1      13  3.2469  0.6895       (--------------*-------------)
2      11  3.0964  1.0656  (---------------*---------------)
                           -------+---------+---------+---------+--
                                2.80      3.15      3.50      3.85

Pooled StDev = 0.8806
```

- **Stages for AML Program**

One-way ANOVA: Stages for AML Program versus Bank Nationality

```
Source             DF     SS     MS     F      P
Bank Nationality   1    0.036  0.036  0.20  0.656
Error              22   3.929  0.179
Total              23   3.965

S = 0.4226   R-Sq = 0.92%   R-Sq(adj) = 0.00%


                           Individual 95% CIs For Mean Based on
                           Pooled StDev
Level   N    Mean   StDev  -------+---------+---------+---------+--
1      13  4.4300  0.4602       (---------------*----------------)
2      11  4.3518  0.3725  (-----------------*-----------------)
                           -------+---------+---------+---------+--
                                4.20      4.35      4.50      4.65

Pooled StDev = 0.4226
```

- **Organization Characteristics**

One-way ANOVA: Top Mgmt Support versus Bank Nationality

```
Source             DF     SS     MS     F      P
Bank Nationality   1     0.013  0.013  0.03  0.854
Error              22    8.012  0.364
Total              23    8.025

S = 0.6035   R-Sq = 0.16%   R-Sq(adj) = 0.00%


                           Individual 95% CIs For Mean Based on
                           Pooled StDev
Level   N    Mean   StDev    +---------+---------+---------+---------
1      13  4.1538  0.5724    (-----------------*----------------)
2      11  4.2000  0.6387     (------------------*------------------)
                             +---------+---------+---------+---------
                           3.80      4.00      4.20      4.40

Pooled StDev = 0.6035
```

One-way ANOVA: Championship versus Bank Nationality

```
Source             DF      SS      MS     F      P
Bank Nationality   1     0.0315  0.0315  0.34  0.564
Error              22    2.0218  0.0919
Total              23  2.0533

S = 0.3032   R-Sq = 1.53%   R-Sq(adj) = 0.00%
```

```
                           Individual 95% CIs For Mean Based on
                           Pooled StDev
Level   N    Mean   StDev  ---------+---------+---------+---------+
1      13  1.6000  0.3367           (-------------*-------------)
2      11  1.5273  0.2573  (---------------*---------------)
                           ---------+---------+---------+---------+
                                  1.44      1.56      1.68      1.80

Pooled StDev = 0.3032
```

One-way ANOVA: Centralization versus Bank Nationality

```
Source             DF     SS     MS     F      P
Bank Nationality   1    0.014  0.014  0.03  0.861
Error              22   9.944  0.452
Total              23   9.958

S = 0.6723   R-Sq = 0.14%   R-Sq(adj) = 0.00%


                           Individual 95% CIs For Mean Based on
                           Pooled StDev
Level   N    Mean   StDev    +---------+---------+---------+---------
1      13  4.2308  0.5991        (---------------*---------------)
2      11  4.1818  0.7508    (-----------------*-----------------)
                             +---------+---------+---------+---------
                           3.75      4.00      4.25      4.50

Pooled StDev = 0.6723
```

One-way ANOVA: Formalization versus Bank Nationality

```
Source             DF      SS      MS     F      P
Bank Nationality   1    0.2252  0.2252  3.51  0.075
Error              22   1.4131  0.0642
Total              23   1.6383

S = 0.2534   R-Sq = 13.74%   R-Sq(adj) = 9.82%


                           Individual 95% CIs For Mean Based on
                           Pooled StDev
Level   N    Mean   StDev  --+---------+---------+---------+-------
1      13  1.1692  0.2287  (---------*---------)
2      11  1.3636  0.2803             (----------*---------)
                           --+---------+---------+---------+-------
                           1.05      1.20      1.35      1.50

Pooled StDev = 0.2534
```

One-way ANOVA: Internal Influence versus Bank Nationality

```
Source             DF      SS     MS     F      P
Bank Nationality   1     1.510  1.510  1.62  0.216
Error              22    20.490  0.931
Total              23    22.000

S = 0.9651   R-Sq = 6.87%   R-Sq(adj) = 2.63%
```

```
                          Individual 95% CIs For Mean Based on
                          Pooled StDev
Level   N    Mean   StDev  --------+---------+---------+---------+-
1      13  4.2308  0.9268             (----------*----------)
2      11  3.7273  1.0090  (------------*-----------)
                          --------+---------+---------+---------+-
                                3.50      4.00      4.50      5.00

Pooled StDev = 0.9651
```

One-way ANOVA: External Influence versus Bank Nationality

```
Source             DF     SS     MS     F      P
Bank Nationality   1     0.269  0.269  1.67  0.209
Error              22    3.544  0.161
Total              23    3.813

S = 0.4014   R-Sq = 7.06%   R-Sq(adj) = 2.84%


                          Individual 95% CIs For Mean Based on
                          Pooled StDev
Level   N    Mean   StDev  --+---------+---------+---------+-------
1      13  1.4308  0.3250             (-----------*----------)
2      11  1.2182  0.4771  (------------*-----------)
                          --+---------+---------+---------+-------
                          1.00      1.20      1.40      1.60

Pooled StDev = 0.4014
```

One-way ANOVA: Organization Slack versus Bank Nationality

```
Source             DF      SS     MS     F      P
Bank Nationality   1     0.141  0.141  0.20  0.661
Error              22    15.692  0.713
Total              23    15.833

S = 0.8446   R-Sq = 0.89%   R-Sq(adj) = 0.00%


                          Individual 95% CIs For Mean Based on
                          Pooled StDev
Level   N    Mean   StDev  ----+---------+---------+---------+-----
1      13  4.1538  0.8987       (---------------*----------------)
2      11  4.0000  0.7746  (----------------*-----------------)
                          ----+---------+---------+---------+-----
                            3.60      3.90      4.20      4.50

Pooled StDev = 0.8446
```

- **Environmental Characteristics**

One-way ANOVA: External Pressure versus Bank Nationality

```
Source             DF      SS      MS     F      P
Bank Nationality   1     0.0842  0.0842  1.61  0.218
Error              22    1.1541  0.0525
Total              23    1.2383
```

```
S = 0.2290   R-Sq = 6.80%   R-Sq(adj) = 2.56%

                          Individual 95% CIs For Mean Based on
                          Pooled StDev
Level   N    Mean   StDev  --------+---------+---------+---------+-
1      13  1.3538  0.1664  (------------*-------------)
2      11  1.4727  0.2867            (-------------*--------------)
                          --------+---------+---------+---------+-
                                1.30      1.40      1.50      1.60

Pooled StDev = 0.2290
```

One-way ANOVA: Competition versus Bank Nationality

```
Source             DF      SS     MS     F      P
Bank Nationality   1     0.298  0.298  0.44  0.516
Error              22    15.035  0.683
Total              23    15.333

S = 0.8267   R-Sq = 1.95%   R-Sq(adj) = 0.00%

                          Individual 95% CIs For Mean Based on
                          Pooled StDev
Level   N    Mean   StDev  ---+---------+---------+---------+------
1      13  3.7692  0.8321         (-------------*------------)
2      11  3.5455  0.8202  (-------------*-------------)
                          ---+---------+---------+---------+------
                           3.15      3.50      3.85      4.20

Pooled StDev = 0.8267
```

One-way ANOVA: Coercive Influence versus Bank Nationality

```
Source             DF     SS    MS     F      P
Bank Nationality   1     0.49  0.49  0.46  0.505
Error              22    23.47  1.07
Total              23    23.96

S = 1.033   R-Sq = 2.04%   R-Sq(adj) = 0.00%

                          Individual 95% CIs For Mean Based on
                          Pooled StDev
Level   N   Mean  StDev  ---+---------+---------+---------+------
1      13  4.077  0.862  (--------------*--------------)
2      11  4.364  1.206        (---------------*---------------)
                          ---+---------+---------+---------+------
                           3.60      4.00      4.40      4.80

Pooled StDev = 1.033
```

- **Degree of Adoption**

One-way ANOVA: Degree of Adoption versus Bank Nationality

```
Source             DF      SS     MS     F      P
Bank Nationality   1     0.221  0.221  0.41  0.527
Error              22    11.784  0.536
```

```
Total              23    12.005

S = 0.7319   R-Sq = 1.84%   R-Sq(adj) = 0.00%


                           Individual 95% CIs For Mean Based on
                           Pooled StDev
Level   N    Mean   StDev   -+---------+---------+---------+--------
1      13  3.3838  0.8044   (-------------*-------------)
2      11  3.5764  0.6340        (--------------*--------------)
                            -+---------+---------+---------+--------
                           3.00      3.30      3.60      3.90

Pooled StDev = 0.7319
```

Appendix B – 3: K-means Cluster Analysis

- Innovation Characteristics

Number of clusters: 2

	Number of observations	Within cluster sum of squares	Average distance from centroid	Maximum distance from centroid
Cluster1	16	22.303	1.114	1.949
Cluster2	9	9.618	0.998	1.356

Cluster Centroids

Variable	Cluster1	Cluster2	Grand centroid
Relative Advantage	4.1000	2.7111	3.6000
Compatibility	5.1375	3.6667	4.6080
Complexity	3.2125	2.5333	2.9680
Triability	2.2250	1.7333	2.0480
Observability	4.1375	3.2889	3.8320

Distances Between Cluster Centroids

	Cluster1	Cluster2
Cluster1	0.0000	2.3485
Cluster2	2.3485	0.0000

Number of clusters: 3

	Number of observations	Within cluster sum of squares	Average distance from centroid	Maximum distance from centroid
Cluster1	7	4.297	0.745	1.138
Cluster2	4	2.940	0.847	0.962
Cluster3	14	20.163	1.143	1.845

Cluster Centroids

Grand

Variable	Cluster1	Cluster2	Cluster3	centroid
Relative Advantage	3.0571	2.5500	4.1714	3.6000
Compatibility	4.0857	3.3500	5.2286	4.6080
Complexity	2.6571	2.6000	3.2286	2.9680
Triability	1.8571	1.6000	2.2714	2.0480
Observability	3.8571	2.6000	4.1714	3.8320

Distances Between Cluster Centroids

	Cluster1	Cluster2	Cluster3
Cluster1	0.0000	1.5647	1.7733
Cluster2	1.5647	0.0000	3.0779
Cluster3	1.7733	3.0779	0.0000

Number of clusters: 4

	Number of observations	Within cluster sum of squares	Average distance from centroid	Maximum distance from centroid
Cluster1	5	2.192	0.639	0.917
Cluster2	4	2.940	0.847	0.962
Cluster3	5	6.224	1.077	1.553
Cluster4	11	9.622	0.884	1.470

Cluster Centroids

Variable	Cluster1	Cluster2	Cluster3	Cluster4	Grand centroid
Relative Advantage	2.8400	2.5500	4.4800	3.9273	3.6000
Compatibility	3.9200	3.3500	5.6000	4.9273	4.6080
Complexity	2.4800	2.6000	3.8800	2.9091	2.9680
Triability	1.8400	1.6000	2.4800	2.1091	2.0480
Observability	3.8400	2.6000	4.0000	4.2000	3.8320

Distances Between Cluster Centroids

	Cluster1	Cluster2	Cluster3	Cluster4
Cluster1	0.0000	1.4208	2.8120	1.6071
Cluster2	1.4208	0.0000	3.6277	2.7017
Cluster3	2.8120	3.6277	0.0000	1.3705
Cluster4	1.6071	2.7017	1.3705	0.0000

- **Organization Characteristics**

Number of clusters: 2

	Number of observations	Within cluster sum of squares	Average distance from centroid	Maximum distance from centroid
Cluster1	15	29.589	1.295	2.801
Cluster2	10	9.316	0.927	1.437

Cluster Centroids

Variable	Cluster1	Cluster2	Grand centroid
Top Mgmt Support	3.9467	4.5200	4.1760
Championship	1.4267	1.7800	1.5680
Centralization	3.8000	4.7000	4.1600
Formalization	1.3600	1.1000	1.2560
Internal Influence	3.2667	4.9000	3.9200
External Influence	1.1333	1.6400	1.3360
Organization Slack	3.6000	4.7000	4.0400

Distances Between Cluster Centroids

	Cluster1	Cluster2
Cluster1	0.0000	2.3379
Cluster2	2.3379	0.0000

Number of clusters: 3

	Number of observations	Within cluster sum of squares	Average distance from centroid	Maximum distance from centroid
Cluster1	12	18.900	1.111	2.823
Cluster2	3	2.587	0.913	1.073
Cluster3	10	9.316	0.927	1.437

Cluster Centroids

Variable	Cluster1	Cluster2	Cluster3	Grand centroid
Top Mgmt Support	3.7500	4.7333	4.5200	4.1760
Championship	1.4667	1.2667	1.7800	1.5680
Centralization	3.8333	3.6667	4.7000	4.1600
Formalization	1.3667	1.3333	1.1000	1.2560
Internal Influence	3.4167	2.6667	4.9000	3.9200
External Influence	1.1333	1.1333	1.6400	1.3360
Organization Slack	3.3333	4.6667	4.7000	4.0400

Distances Between Cluster Centroids

	Cluster1	Cluster2	Cluster3
Cluster1	0.0000	1.8374	2.4162
Cluster2	1.8374	0.0000	2.5840
Cluster3	2.4162	2.5840	0.0000

Number of clusters: 4

	Number of observations	Within cluster sum of squares	Average distance from centroid	Maximum distance from centroid
Cluster1	6	9.253	1.156	2.057
Cluster2	2	0.860	0.656	0.656
Cluster3	9	7.867	0.879	1.463

Cluster4	8	6.800	0.871	1.378

Cluster Centroids

Variable	Cluster1	Cluster2	Cluster3	Cluster4	Grand centroid
Top Mgmt Support	3.8333	4.7000	4.5778	3.8500	4.1760
Championship	1.4000	1.2000	1.8000	1.5250	1.5680
Centralization	3.6667	3.5000	4.7778	4.0000	4.1600
Formalization	1.3667	1.4000	1.0889	1.3250	1.2560
Internal Influence	2.5000	3.0000	4.8889	4.1250	3.9200
External Influence	1.1000	1.3000	1.6444	1.1750	1.3360
Organization Slack	3.3333	5.0000	4.7778	3.5000	4.0400

Distances Between Cluster Centroids

	Cluster1	Cluster2	Cluster3	Cluster4
Cluster1	0.0000	1.9717	3.1805	1.6741
Cluster2	1.9717	0.0000	2.4167	2.1483
Cluster3	3.1805	2.4167	0.0000	1.9242
Cluster4	1.6741	2.1483	1.9242	0.0000

- Environmental Characteristics

Number of clusters: 2

	Number of observations	Within cluster sum of squares	Average distance from centroid	Maximum distance from centroid
Cluster1	18	12.547	0.762	1.399
Cluster2	7	13.543	1.182	2.748

Cluster Centroids

Variable	Cluster1	Cluster2	Grand centroid
External Pressure	1.4778	1.2000	1.4000
Competition	4.1111	2.5714	3.6800
Coercive Influence	4.3889	3.7143	4.2000

Distances Between Cluster Centroids

	Cluster1	Cluster2
Cluster1	0.0000	1.7038
Cluster2	1.7038	0.0000

Number of clusters: 3

	Number of observations	Within cluster sum of squares	Average distance from centroid	Maximum distance from centroid
Cluster1	8	2.015	0.489	0.643
Cluster2	7	13.543	1.182	2.748
Cluster3	10	1.940	0.372	0.854

Cluster Centroids

Variable	Cluster1	Cluster2	Cluster3	Grand centroid
External Pressure	1.4500	1.2000	1.5000	1.4000
Competition	4.0000	2.5714	4.2000	3.6800
Coercive Influence	3.6250	3.7143	5.0000	4.2000

Distances Between Cluster Centroids

	Cluster1	Cluster2	Cluster3
Cluster1	0.0000	1.4530	1.3904
Cluster2	1.4530	0.0000	2.0965
Cluster3	1.3904	2.0965	0.0000

Number of clusters: 4

	Number of observations	Within cluster sum of squares	Average distance from centroid	Maximum distance from centroid
Cluster1	8	2.015	0.489	0.643
Cluster2	7	13.543	1.182	2.748
Cluster3	2	0.080	0.200	0.200
Cluster4	8	0.235	0.144	0.325

Cluster Centroids

Variable	Cluster1	Cluster2	Cluster3	Cluster4	Grand centroid
External Pressure	1.4500	1.2000	1.4000	1.5250	1.4000
Competition	4.0000	2.5714	5.0000	4.0000	3.6800
Coercive Influence	3.6250	3.7143	5.0000	5.0000	4.2000

Distances Between Cluster Centroids

	Cluster1	Cluster2	Cluster3	Cluster4
Cluster1	0.0000	1.4530	1.7009	1.3770
Cluster2	1.4530	0.0000	2.7552	1.9492
Cluster3	1.7009	2.7552	0.0000	1.0078
Cluster4	1.3770	1.9492	1.0078	0.0000

Appendix B – 4: Analysis of Variance (CG1 vs. CG2)

- **Innovation Characteristics**

One-way ANOVA: Relative Advantage versus K-means Clustering groups

```
Source               DF      SS     MS     F      P
K-means Clustering   1     0.282  0.282  0.41  0.528
Error                22    15.103  0.687
Total                23    15.385

S = 0.8286   R-Sq = 1.83%   R-Sq(adj) = 0.00%


                             Individual 95% CIs For Mean Based on
                             Pooled StDev
Level     N    Mean   StDev  ----+---------+---------+---------+-----
Group 1  12  3.7333  0.7644        (--------------*-------------)
Group 2  12  3.5167  0.8881  (--------------*--------------)
                             ----+---------+---------+---------+-----
                               3.15      3.50      3.85      4.20

Pooled StDev = 0.8286
```

One-way ANOVA: Compatibility versus K-means Clustering groups

```
Source               DF      SS     MS     F      P
K-means Clustering   1     2.802  2.802  3.60  0.071
Error                22    17.117  0.778
Total                23    19.918

S = 0.8821   R-Sq = 14.07%   R-Sq(adj) = 10.16%


                             Individual 95% CIs For Mean Based on
                             Pooled StDev
Level     N    Mean   StDev  -----+---------+---------+---------+----
Group 1  12  4.9833  0.8548                (----------*---------)
Group 2  12  4.3000  0.9085  (----------*----------)
                             -----+---------+---------+---------+----
                                4.00      4.50      5.00      5.50

Pooled StDev = 0.8821
```

One-way ANOVA: Complexity versus K-means Clustering groups

```
Source               DF     SS     MS     F      P
K-means Clustering   1    0.375  0.375  1.08  0.310
Error                22   7.650  0.348
Total                23   8.025

S = 0.5897   R-Sq = 4.67%   R-Sq(adj) = 0.34%


                             Individual 95% CIs For Mean Based on
                             Pooled StDev
Level     N    Mean   StDev    +---------+---------+---------+---------
Group 1  12  3.1000  0.6633              (-------------*-------------)
```

```
Group 2  12  2.8500  0.5054    (-------------*-------------)
                               +---------+---------+---------+---------
                             2.50      2.75      3.00      3.25

Pooled StDev = 0.5897
```

One-way ANOVA: Triability versus K-means Clustering groups

```
Source               DF     SS     MS     F      P
K-means Clustering   1    0.042  0.042  0.29  0.598
Error                22   3.197  0.145
Total                23   3.238

S = 0.3812   R-Sq = 1.29%   R-Sq(adj) = 0.00%


                             Individual 95% CIs For Mean Based on
                             Pooled StDev
Level     N    Mean   StDev   -+---------+---------+---------+--------
Group 1  12  2.1000  0.3568         (--------------*--------------)
Group 2  12  2.0167  0.4041   (--------------*---------------)
                              -+---------+---------+---------+--------
                             1.80      1.95      2.10      2.25

Pooled StDev = 0.3812
```

One-way ANOVA: Observability versus K-means Clustering groups

```
Source               DF      SS     MS     F      P
K-means Clustering   1     0.202  0.202  0.28  0.601
Error                22    15.743  0.716
Total                23    15.945

S = 0.8459   R-Sq = 1.26%   R-Sq(adj) = 0.00%


                             Individual 95% CIs For Mean Based on
                             Pooled StDev
Level     N    Mean   StDev  --+---------+---------+---------+-------
Group 1  12  3.9167  0.9514        (----------------*---------------)
Group 2  12  3.7333  0.7253  (----------------*----------------)
                             --+---------+---------+---------+-------
                             3.30      3.60      3.90      4.20

Pooled StDev = 0.8459
```

- **E-learning Readiness**

One-way ANOVA: E-learning Readiness versus K-means Clustering groups

```
Source               DF      SS     MS     F      P
K-means Clustering   1      5.236  5.236  9.63  0.005
Error                22     11.958  0.544
Total                23     17.194

S = 0.7373   R-Sq = 30.45%   R-Sq(adj) = 27.29%


                             Individual 95% CIs For Mean Based on
```

```
                                Pooled StDev
Level     N    Mean   StDev  -----+---------+---------+---------+----
Group 1  12  3.6450  0.7331                    (--------*--------)
Group 2  12  2.7108  0.7414  (--------*--------)
                               -----+---------+---------+---------+----
                                  2.50      3.00      3.50      4.00

Pooled StDev = 0.7373
```

- **Stages for AML Program**

One-way ANOVA: Stages for AML Program versus K-means Clustering groups

```
Source               DF     SS     MS      F      P
K-means Clustering   1     1.591  1.591  14.75  0.001
Error                22    2.374  0.108
Total                23    3.965

S = 0.3285   R-Sq = 40.13%   R-Sq(adj) = 37.41%


                                Individual 95% CIs For Mean Based on
                                Pooled StDev
Level     N    Mean   StDev  --+---------+---------+---------+-------
Group 1  12  4.6517  0.1997                      (-------*-------)
Group 2  12  4.1367  0.4195  (------*-------)
                               --+---------+---------+---------+-------
                               4.00      4.25      4.50      4.75

Pooled StDev = 0.3285
```

- **Organization Characteristics**

One-way ANOVA: Top Mgmt Support versus K-means Clustering groups

```
Source               DF     SS     MS      F      P
K-means Clustering   1     3.082  3.082  13.71  0.001
Error                22    4.943  0.225
Total                23    8.025

S = 0.4740   R-Sq = 38.40%   R-Sq(adj) = 35.60%


                                Individual 95% CIs For Mean Based on
                                Pooled StDev
Level     N    Mean   StDev  ---------+---------+---------+---------+
Group 1  12  4.5333  0.5069                      (--------*-------)
Group 2  12  3.8167  0.4387  (-------*-------)
                               ---------+---------+---------+---------+
                                      3.85      4.20      4.55      4.90

Pooled StDev = 0.4740
```

One-way ANOVA: Championship versus K-means Clustering groups

```
Source               DF      SS      MS     F      P
K-means Clustering   1     0.1667  0.1667  1.94  0.177
Error                22    1.8867  0.0858
Total                23    2.0533
```

```
S = 0.2928   R-Sq = 8.12%   R-Sq(adj) = 3.94%

                            Individual 95% CIs For Mean Based on
                            Pooled StDev
Level     N    Mean   StDev  ---+---------+---------+---------+------
Group 1  12  1.6500  0.3317            (-----------*-----------)
Group 2  12  1.4833  0.2480  (-----------*-----------)
                            ---+---------+---------+---------+------
                             1.35      1.50      1.65      1.80

Pooled StDev = 0.2928
```

One-way ANOVA: Centralization versus K-means Clustering groups

```
Source                DF     SS     MS     F      P
K-means Clustering    1    1.042  1.042  2.57  0.123
Error                 22   8.917  0.405
Total                 23   9.958

S = 0.6366   R-Sq = 10.46%   R-Sq(adj) = 6.39%

                            Individual 95% CIs For Mean Based on
                            Pooled StDev
Level     N    Mean   StDev  ---------+---------+---------+---------+
Group 1  12  4.4167  0.6686               (-----------*------------)
Group 2  12  4.0000  0.6030  (-----------*------------)
                            ---------+---------+---------+---------+
                                   3.90      4.20      4.50      4.80

Pooled StDev = 0.6366
```

One-way ANOVA: Formalization versus K-means Clustering groups

```
Source                DF      SS      MS     F      P
K-means Clustering    1     0.4817  0.4817  9.16  0.006
Error                 22    1.1567  0.0526
Total                 23    1.6383

S = 0.2293   R-Sq = 29.40%   R-Sq(adj) = 26.19%

                            Individual 95% CIs For Mean Based on
                            Pooled StDev
Level     N    Mean   StDev  -----+---------+---------+---------+----
Group 1  12  1.1167  0.2167  (--------*---------)
Group 2  12  1.4000  0.2412                    (--------*--------)
                            -----+---------+---------+---------+----
                               1.05      1.20      1.35      1.50

Pooled StDev = 0.2293
```

One-way ANOVA: Internal Influence versus K-means Clustering groups

```
Source                DF      SS     MS     F      P
K-means Clustering    1      4.167  4.167  5.14  0.034
Error                 22     17.833  0.811
Total                 23     22.000
```

```
S = 0.9003   R-Sq = 18.94%   R-Sq(adj) = 15.25%


                            Individual 95% CIs For Mean Based on
                            Pooled StDev
Level     N    Mean   StDev  ---------+---------+---------+---------+
Group 1  12  4.4167  0.9962                   (---------*---------)
Group 2  12  3.5833  0.7930  (----------*---------)
                            ---------+---------+---------+---------+
                                   3.50      4.00      4.50      5.00

Pooled StDev = 0.9003
```

One-way ANOVA: External Influence versus K-means Clustering groups

```
Source               DF     SS     MS     F      P
K-means Clustering   1     0.807  0.807  5.90  0.024
Error                22    3.007  0.137
Total                23    3.813

S = 0.3697   R-Sq = 21.15%   R-Sq(adj) = 17.57%


                            Individual 95% CIs For Mean Based on
                            Pooled StDev
Level     N    Mean   StDev  ---+---------+---------+---------+------
Group 1  12  1.5167  0.3353                (--------*--------)
Group 2  12  1.1500  0.4011  (--------*--------)
                            ---+---------+---------+---------+------
                             1.00      1.25      1.50      1.75

Pooled StDev = 0.3697
```

One-way ANOVA: Organization Slack versus K-means Clustering groups

```
Source               DF      SS     MS      F      P
K-means Clustering   1      6.000  6.000  13.42  0.001
Error                22     9.833  0.447
Total                23     15.833

S = 0.6686   R-Sq = 37.89%   R-Sq(adj) = 35.07%


                            Individual 95% CIs For Mean Based on
                            Pooled StDev
Level     N    Mean   StDev  ------+---------+---------+---------+---
Group 1  12  4.5833  0.5149                     (-------*-------)
Group 2  12  3.5833  0.7930  (-------*-------)
                            ------+---------+---------+---------+---
                                3.50      4.00      4.50      5.00

Pooled StDev = 0.6686
```

- **Environmental Characteristics**

One-way ANOVA: External Pressure versus K-means Clustering groups

```
Source               DF      SS      MS     F      P
K-means Clustering   1    0.0417  0.0417  0.77  0.391
Error                22   1.1967  0.0544
Total                23   1.2383

S = 0.2332   R-Sq = 3.36%   R-Sq(adj) = 0.00%


                             Individual 95% CIs For Mean Based on
                             Pooled StDev
Level     N    Mean   StDev  -------+---------+---------+---------+--
Group 1  12  1.4500  0.1931          (-------------*-------------)
Group 2  12  1.3667  0.2674  (-------------*-------------)
                             -------+---------+---------+---------+--
                                  1.30      1.40      1.50      1.60

Pooled StDev = 0.2332
```

One-way ANOVA: Competition versus K-means Clustering groups

```
Source               DF      SS     MS     F      P
K-means Clustering   1     0.000  0.000  0.00  1.000
Error                22    15.333  0.697
Total                23    15.333

S = 0.8348   R-Sq = 0.00%   R-Sq(adj) = 0.00%


                             Individual 95% CIs For Mean Based on
                             Pooled StDev
Level     N    Mean   StDev  ---+---------+---------+---------+------
Group 1  12  3.6667  0.7785  (--------------------*--------------------)
Group 2  12  3.6667  0.8876  (--------------------*--------------------)
                             ---+---------+---------+---------+------
                              3.25      3.50      3.75      4.00

Pooled StDev = 0.8348
```

One-way ANOVA: Coercive Influence versus K-means Clustering groups

```
Source               DF     SS    MS     F      P
K-means Clustering   1     0.38  0.38  0.35  0.560
Error                22    23.58  1.07
Total                23    23.96

S = 1.035   R-Sq = 1.57%   R-Sq(adj) = 0.00%


                             Individual 95% CIs For Mean Based on
                             Pooled StDev
Level     N   Mean  StDev  ---+---------+---------+---------+------
Group 1  12  4.083  1.311  (---------------*---------------)
Group 2  12  4.333  0.651        (---------------*---------------)
                             ---+---------+---------+---------+------
                              3.60      4.00      4.40      4.80
```

```
Pooled StDev = 1.035
```

- **Degree of Adoption**

One-way ANOVA: Degree of Adoption versus K-means Clustering groups

```
Source               DF      SS     MS     F      P
K-means Clustering   1     0.901  0.901  1.79  0.195
Error                22    11.104  0.505
Total                23    12.005

S = 0.7104   R-Sq = 7.50%   R-Sq(adj) = 3.30%


                             Individual 95% CIs For Mean Based on
                             Pooled StDev
Level     N    Mean   StDev  --------+---------+---------+---------+-
Group 1  12  3.6658  0.7398            (-----------*-----------)
Group 2  12  3.2783  0.6798  (-----------*-----------)
                             --------+---------+---------+---------+-
                                   3.15      3.50      3.85      4.20

Pooled StDev = 0.7104
```

Appendix B – 5: Bank Categories - Binary Logistic Regression (NB vs. MNB)

```
Link Function: Logit

Response Information

Variable          Value    Count
Banks Nationality Local       13  (Event)
                  Foreign     12
                  Total       25


Logistic Regression Table

                                                      Odds     95% CI
Predictor            Coef  SE Coef      Z      P  Ratio  Lower  Upper
Constant          8.50655  4.21375   2.02  0.044
Innovators       -1.31370  1.36547  -0.96  0.336   0.27   0.02   3.91
Early Adopters    0.130242  1.80556   0.07  0.942   1.14   0.03  39.22
Early Majority   -2.01264  1.54562  -1.30  0.193   0.13   0.01   2.76
Late Majority  -0.0271862  1.39262  -0.02  0.984   0.97   0.06  14.91
Laggards         -1.64777  1.11818  -1.47  0.141   0.19   0.02   1.72


Log-Likelihood = -14.280
Test that all slopes are zero: G = 6.058, DF = 5, P-Value = 0.301


Goodness-of-Fit Tests

Method          Chi-Square  DF      P
Pearson            24.3043  17  0.111
Deviance           28.5595  17  0.039
Hosmer-Lemeshow     7.5963   8  0.474
```

Table of Observed and Expected Frequencies:
(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)

					Group						
Value	1	2	3	4	5	6	7	8	9	10	Total
Local											
Obs	0	1	1	0	1	4	1	1	1	3	13
Exp	0.2	0.7	0.6	1.2	1.0	2.4	1.3	1.5	1.6	2.5	
Foreign											
Obs	2	2	1	3	1	0	1	1	1	0	12
Exp	1.8	2.3	1.4	1.8	1.0	1.6	0.7	0.5	0.4	0.5	
Total	2	3	2	3	2	4	2	2	2	3	25

Measures of Association:
(Between the Response Variable and Predicted Probabilities)

Pairs	Number	Percent	Summary Measures	
Concordant	118	75.6	Somers' D	0.52
Discordant	37	23.7	Goodman-Kruskal Gamma	0.52
Ties	1	0.6	Kendall's Tau-a	0.27
Total	156	100.0		

Appendix B: Analysis of Variance (UEL vs. NEL)

- Innovation Characteristics

One-way ANOVA: Relative Advantage versus Currently Using e-learning

Source	DF	SS	MS	F	P
Currently Using	1	0.160	0.160	0.24	0.632
Error	23	15.600	0.678		
Total	24	15.760			

S = 0.8236 R-Sq = 1.02% R-Sq(adj) = 0.00%

Level	N	Mean	StDev	Individual 95% CIs For Mean Based on Pooled StDev
1	20	3.5600	0.8599	(---------*---------)
2	5	3.7600	0.6229	(------------------*------------------)
				3.20 3.60 4.00 4.40

Pooled StDev = 0.8236

One-way ANOVA: Compatibility versus Currently Using e-learning

Source	DF	SS	MS	F	P
Currently Using	1	1.166	1.166	1.38	0.252
Error	23	19.432	0.845		
Total	24	20.598			

S = 0.9192 R-Sq = 5.66% R-Sq(adj) = 1.56%

Individual 95% CIs For Mean Based on
Pooled StDev

```
Level   N    Mean   StDev  ---------+---------+---------+---------+
1      20  4.5000  0.9873  (--------*--------)
2       5  5.0400  0.4775     (-----------------*----------------)
                           ---------+---------+---------+---------+
                                  4.50      5.00      5.50      6.00

Pooled StDev = 0.9192
```

One-way ANOVA: Complexity versus Currently Using e-learning

```
Source            DF     SS     MS     F      P
Currently Using    1  1.392  1.392  4.81  0.039
Error             23  6.662  0.290
Total             24  8.054

S = 0.5382   R-Sq = 17.29%   R-Sq(adj) = 13.69%


                           Individual 95% CIs For Mean Based on
                           Pooled StDev
Level   N    Mean   StDev  ------+---------+---------+---------+---
1      20  2.8500  0.5346  (------*-------)
2       5  3.4400  0.5550            (-------------*--------------)
                           ------+---------+---------+---------+---
                               2.80      3.15      3.50      3.85

Pooled StDev = 0.5382
```

One-way ANOVA: Triability versus Currently Using e-learning

```
Source            DF     SS     MS     F      P
Currently Using    1  0.078  0.078  0.56  0.462
Error             23  3.224  0.140
Total             24  3.302

S = 0.3744   R-Sq = 2.37%   R-Sq(adj) = 0.00%


                           Individual 95% CIs For Mean Based on
                           Pooled StDev
Level   N    Mean   StDev  ---------+---------+---------+---------+
1      20  2.0200  0.3722   (--------*--------)
2       5  2.1600  0.3847  (-----------------*----------------)
                           ---------+---------+---------+---------+
                                  2.00      2.20      2.40      2.60

Pooled StDev = 0.3744
```

One-way ANOVA: Observability versus Currently Using e-learning

```
Source            DF      SS     MS     F      P
Currently Using    1   0.144  0.144  0.21  0.651
Error             23  15.830  0.688
Total             24  15.974

S = 0.8296   R-Sq = 0.90%   R-Sq(adj) = 0.00%


                           Individual 95% CIs For Mean Based on
                           Pooled StDev
```

```
Level   N    Mean   StDev  -------+---------+---------+---------+--
1      20  3.8700  0.8736               (---------*--------)
2       5  3.6800  0.5762  (------------------*------------------)
                           -------+---------+---------+---------+--
                                3.20      3.60      4.00      4.40

Pooled StDev = 0.8296
```

- **E-learning Readiness**

One-way ANOVA: E-learning Readiness versus Currently Using e-learning

```
Source            DF      SS     MS     F      P
Currently Using    1   5.198  5.198  9.64  0.005
Error             23  12.399  0.539
Total             24  17.597

S = 0.7342   R-Sq = 29.54%   R-Sq(adj) = 26.48%


                           Individual 95% CIs For Mean Based on
                           Pooled StDev
Level   N    Mean   StDev  -------+---------+---------+---------+--
1      20  2.9240  0.7516  (-----*----)
2       5  4.0640  0.6455               (-----------*----------)
                           -------+---------+---------+---------+--
                                3.00      3.60      4.20      4.80

Pooled StDev = 0.7342
```

- **Stages for AML Program**

One-way ANOVA: Stages for AML Program versus Currently Using e-learning

```
Source            DF     SS     MS     F      P
Currently Using    1  0.438  0.438  2.32  0.141
Error             23  4.347  0.189
Total             24  4.785

S = 0.4347   R-Sq = 9.16%   R-Sq(adj) = 5.21%


                           Individual 95% CIs For Mean Based on
                           Pooled StDev
Level   N    Mean   StDev  ------+---------+---------+---------+---
1      20  4.2910  0.4586  (-------*-------)
2       5  4.6220  0.2960       (---------------*---------------)
                           ------+---------+---------+---------+---
                               4.25      4.50      4.75      5.00

Pooled StDev = 0.4347
```

- **Organization Characteristics**

One-way ANOVA: Top Mgmt Support versus Currently Using e-learning

```
Source            DF     SS     MS     F      P
Currently Using    1  0.314  0.314  0.94  0.344
Error             23  7.712  0.335
Total             24  8.026

S = 0.5791   R-Sq = 3.91%   R-Sq(adj) = 0.00%
```

```
                           Individual 95% CIs For Mean Based on
                           Pooled StDev
Level   N    Mean   StDev  --+---------+---------+---------+-------
1      20  4.1200  0.5634  (--------*--------)
2       5  4.4000  0.6481   (-----------------*-----------------)
                           --+---------+---------+---------+-------
                           3.90      4.20      4.50      4.80

Pooled StDev = 0.5791
```

One-way ANOVA: Championship versus Currently Using e-learning

```
Source            DF      SS      MS     F      P
Currently Using    1  0.1444  0.1444  1.74  0.200
Error             23  1.9100  0.0830
Total             24  2.0544

S = 0.2882   R-Sq = 7.03%   R-Sq(adj) = 2.99%


                           Individual 95% CIs For Mean Based on
                           Pooled StDev
Level   N    Mean   StDev  -------+---------+---------+---------+--
1      20  1.5300  0.2774  (--------*--------)
2       5  1.7200  0.3347      (-----------------*----------------)
                           -------+---------+---------+---------+--
                                1.50      1.65      1.80      1.95

Pooled StDev = 0.2882
```

One-way ANOVA: Centralization versus Currently Using e-learning

```
Source            DF      SS     MS     F      P
Currently Using    1   0.360  0.360  0.75  0.395
Error             23  11.000  0.478
Total             24  11.360

S = 0.6916   R-Sq = 3.17%   R-Sq(adj) = 0.00%


                           Individual 95% CIs For Mean Based on
                           Pooled StDev
Level   N    Mean   StDev  ---+---------+---------+---------+------
1      20  4.1000  0.7182   (--------*--------)
2       5  4.4000  0.5477  (-----------------*-----------------)
                           ---+---------+---------+---------+------
                            3.85      4.20      4.55      4.90

Pooled StDev = 0.6916
```

One-way ANOVA: Formalization versus Currently Using e-learning

```
Source            DF      SS      MS     F      P
Currently Using    1  0.0036  0.0036  0.05  0.824
Error             23  1.6380  0.0712
Total             24  1.6416

S = 0.2669   R-Sq = 0.22%   R-Sq(adj) = 0.00%


                           Individual 95% CIs For Mean Based on
```

```
                          Pooled StDev
Level   N    Mean   StDev   -+---------+---------+---------+--------
1      20  1.2500  0.2503         (-------*--------)
2       5  1.2800  0.3347   (----------------*----------------)
                           -+---------+---------+---------+--------
                          1.05      1.20      1.35      1.50

Pooled StDev = 0.2669
```

One-way ANOVA: Internal Influence versus Currently Using e-learning

```
Source            DF     SS    MS     F      P
Currently Using    1   0.49  0.49  0.41  0.527
Error             23  27.35  1.19
Total             24  27.84

S = 1.090   R-Sq = 1.76%   R-Sq(adj) = 0.00%


                          Individual 95% CIs For Mean Based on
                          Pooled StDev
Level   N   Mean  StDev  -------+---------+---------+---------+--
1      20  3.850  1.137     (-------*--------)
2       5  4.200  0.837  (-----------------*-----------------)
                          -------+---------+---------+---------+--
                               3.60      4.20      4.80      5.40

Pooled StDev = 1.090
```

One-way ANOVA: External Influence versus Currently Using e-learning

```
Source            DF     SS     MS     F      P
Currently Using    1  0.026  0.026  0.16  0.697
Error             23  3.792  0.165
Total             24  3.818

S = 0.4060   R-Sq = 0.67%   R-Sq(adj) = 0.00%


                          Individual 95% CIs For Mean Based on
                          Pooled StDev
Level   N    Mean   StDev  ---------+---------+---------+---------+
1      20  1.3200  0.4124         (--------*--------)
2       5  1.4000  0.3742  (-------------------*-------------------)
                          ---------+---------+---------+---------+
                                 1.20      1.40      1.60      1.80

Pooled StDev = 0.4060
```

One-way ANOVA: Organization Slack versus Currently Using e-learning

```
Source            DF      SS     MS     F      P
Currently Using    1   1.960  1.960  3.01  0.096
Error             23  15.000  0.652
Total             24  16.960

S = 0.8076   R-Sq = 11.56%   R-Sq(adj) = 7.71%


                          Individual 95% CIs For Mean Based on
                          Pooled StDev
Level   N    Mean   StDev  ---------+---------+---------+---------+
1      20  3.9000  0.8522  (------*------)
```

```
2       5  4.6000  0.5477        (--------------*--------------)
                               ---------+---------+---------+---------+
                                      4.00      4.50      5.00      5.50

Pooled StDev = 0.8076
```

- **Environmental Characteristics**

One-way ANOVA: External Pressure versus Currently Using e-learning

```
Source            DF      SS      MS     F      P
Currently Using    1  0.0000  0.0000  0.00  1.000
Error             23  1.2800  0.0557
Total             24  1.2800

S = 0.2359   R-Sq = 0.00%   R-Sq(adj) = 0.00%


                            Individual 95% CIs For Mean Based on
                            Pooled StDev
Level   N    Mean   StDev  --+---------+---------+---------+-------
1      20  1.4000  0.2428           (--------*--------)
2       5  1.4000  0.2000  (------------------*------------------)
                            --+---------+---------+---------+-------
                            1.20      1.32      1.44      1.56

Pooled StDev = 0.2359
```

One-way ANOVA: Competition versus Currently Using e-learning

```
Source            DF      SS     MS     F      P
Currently Using    1   0.640  0.640  0.99  0.329
Error             23  14.800  0.643
Total             24  15.440

S = 0.8022   R-Sq = 4.15%   R-Sq(adj) = 0.00%


                            Individual 95% CIs For Mean Based on
                            Pooled StDev
Level   N    Mean   StDev  ---------+---------+---------+---------+
1      20  3.6000  0.8208  (--------*--------)
2       5  4.0000  0.7071  (------------------*------------------)
                            ---------+---------+---------+---------+
                                   3.60      4.00      4.40      4.80

Pooled StDev = 0.8022
```

One-way ANOVA: Coercive Influence versus Currently Using e-learning

```
Source            DF     SS    MS     F      P
Currently Using    1   1.00  1.00  1.00  0.328
Error             23  23.00  1.00
Total             24  24.00

S = 1   R-Sq = 4.17%   R-Sq(adj) = 0.00%


                        Individual 95% CIs For Mean Based on
                        Pooled StDev
```

```
Level   N   Mean  StDev  ---+---------+---------+---------+------
1      20  4.300  0.733                    (--------*--------)
2       5  3.800  1.789  (-------------------*-------------------)
                         ---+---------+---------+---------+------
                          3.00      3.50      4.00      4.50

Pooled StDev = 1.000
```

- **Degree of Adoption**

One-way ANOVA: Degree of Adoption versus Currently Using e-learning

```
Source            DF      SS     MS     F      P
Currently Using    1   1.445  1.445  3.08  0.092
Error             23  10.774  0.468
Total             24  12.219

S = 0.6844   R-Sq = 11.82%   R-Sq(adj) = 7.99%


                          Individual 95% CIs For Mean Based on
                          Pooled StDev
Level   N    Mean   StDev  -----+---------+---------+---------+----
1      20  3.3330  0.4967  (-------*-------)
2       5  3.9340  1.2336          (--------------*---------------)
                          -----+---------+---------+---------+----
                             3.20      3.60      4.00      4.40

Pooled StDev = 0.6844
```

Appendix B – 7: Binary Logistic Regression (UEL vs. NEL)

- **Innovation Characteristics**

Binary Logistic Regression: Currently Using versus Relative Advantage

```
Link Function: Logit


Response Information

Variable                    Value  Count
Currently Using e-learning  2          5  (Event)
                            1         20
                            Total     25


Logistic Regression Table

                                                          Odds     95% CI
Predictor              Coef   SE Coef      Z      P  Ratio  Lower  Upper
Constant           -2.55472   2.42206  -1.05  0.292
Relative Advantage  0.319243  0.637056   0.50  0.616   1.38   0.39   4.80


Log-Likelihood = -12.383
Test that all slopes are zero: G = 0.254, DF = 1, P-Value = 0.614

Goodness-of-Fit Tests

Method           Chi-Square  DF      P
Pearson             8.11203   8  0.423
Deviance            9.85627   8  0.275
```

```
Hosmer-Lemeshow     3.21466   6  0.781


Table of Observed and Expected Frequencies:
(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)

                        Group
Value    1    2    3    4    5    6    7    8  Total
2
  Obs    0    1    0    1    1    0    1    1      5
  Exp  0.3  0.6  0.5  0.8  0.6  0.7  0.5  1.1
1
  Obs    2    3    3    3    2    3    1    3     20
  Exp  1.7  3.4  2.5  3.2  2.4  2.3  1.5  2.9
Total    2    4    3    4    3    3    2    4     25


Measures of Association:
(Between the Response Variable and Predicted Probabilities)

Pairs       Number  Percent  Summary Measures
Concordant      55     55.0  Somers' D              0.18
Discordant      37     37.0  Goodman-Kruskal Gamma  0.20
Ties             8      8.0  Kendall's Tau-a        0.06
Total          100    100.0
```

Binary Logistic Regression: Currently Using versus Compatibility

```
Link Function: Logit


Response Information

Variable                    Value  Count
Currently Using e-learning  2          5  (Event)
                            1         20
                            Total     25


Logistic Regression Table

                                                    Odds     95% CI
Predictor          Coef   SE Coef      Z      P  Ratio  Lower  Upper
Constant       -4.83172   3.11981  -1.55  0.121
Compatibility  0.721108  0.623686   1.16  0.248   2.06   0.61   6.98


Log-Likelihood = -11.764
Test that all slopes are zero: G = 1.493, DF = 1, P-Value = 0.222


Goodness-of-Fit Tests

Method           Chi-Square  DF      P
Pearson             13.8744  10  0.179
Deviance            15.7508  10  0.107
Hosmer-Lemeshow      7.1347   5  0.211


Table of Observed and Expected Frequencies:
(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)
```

				Group				
Value	1	2	3	4	5	6	7	Total
2								
Obs	0	0	0	1	1	2	1	5
Exp	0.1	0.3	0.2	1.0	1.0	0.5	1.8	
1								
Obs	2	3	2	5	4	0	4	20
Exp	1.9	2.7	1.8	5.0	4.0	1.5	3.2	
Total	2	3	2	6	5	2	5	25

Measures of Association:
(Between the Response Variable and Predicted Probabilities)

Pairs	Number	Percent	Summary Measures	
Concordant	67	67.0	Somers' D	0.39
Discordant	28	28.0	Goodman-Kruskal Gamma	0.41
Ties	5	5.0	Kendall's Tau-a	0.13
Total	100	100.0		

Binary Logistic Regression: Currently Using e-learning versus Complexity

Link Function: Logit

Response Information

Variable	Value	Count	
Currently Using e-learning	2	5	(Event)
	1	20	
	Total	25	

Logistic Regression Table

Predictor	Coef	SE Coef	Z	P	Odds Ratio	95% CI Lower	Upper
Constant	-7.66239	3.47770	-2.20	0.028			
Complexity	1.99895	1.04786	1.91	0.056	7.38	0.95	57.56

Log-Likelihood = -10.290
Test that all slopes are zero: G = 4.440, DF = 1, P-Value = 0.035

Goodness-of-Fit Tests

Method	Chi-Square	DF	P
Pearson	9.90632	8	0.272
Deviance	9.48993	8	0.303
Hosmer-Lemeshow	9.84692	6	0.131

Table of Observed and Expected Frequencies:
(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)

				Group					
Value	1	2	3	4	5	6	7	8	Total
2									
Obs	0	0	1	0	0	1	2	1	5
Exp	0.0	0.1	0.2	0.7	0.5	0.9	0.9	1.7	
1									
Obs	2	3	1	6	3	3	0	2	20

```
  Exp  2.0  2.9  1.8  5.3  2.5  3.1  1.1  1.3
Total    2    3    2    6    3    4    2    3     25


Measures of Association:
(Between the Response Variable and Predicted Probabilities)

Pairs       Number  Percent  Summary Measures
Concordant      74     74.0  Somers' D              0.54
Discordant      20     20.0  Goodman-Kruskal Gamma  0.57
Ties             6      6.0  Kendall's Tau-a        0.18
Total          100    100.0
```

Binary Logistic Regression: Currently Using e-learning versus Triability

```
Link Function: Logit


Response Information

Variable                    Value  Count
Currently Using e-learning  2          5  (Event)
                            1         20
                            Total     25


Logistic Regression Table

                                                 Odds     95% CI
Predictor       Coef  SE Coef      Z      P  Ratio  Lower  Upper
Constant    -3.60496  3.01598  -1.20  0.232
Triability   1.06216  1.39774   0.76  0.447   2.89   0.19  44.78


Log-Likelihood = -12.214
Test that all slopes are zero: G = 0.592, DF = 1, P-Value = 0.442


Goodness-of-Fit Tests

Method           Chi-Square  DF      P
Pearson             5.12164   6  0.528
Deviance            5.97675   6  0.426
Hosmer-Lemeshow     1.78812   4  0.775


Table of Observed and Expected Frequencies:
(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)

                  Group
Value    1    2    3    4    5    6  Total
2
  Obs    1    0    1    1    1    1      5
  Exp  0.5  0.6  1.1  1.3  0.8  0.7
1
  Obs    3    4    5    5    2    1     20
  Exp  3.5  3.4  4.9  4.7  2.2  1.3
Total    4    4    6    6    3    2     25


Measures of Association:
(Between the Response Variable and Predicted Probabilities)
```

Pairs	Number	Percent	Summary Measures	
Concordant	56	56.0	Somers' D	0.26
Discordant	30	30.0	Goodman-Kruskal Gamma	0.30
Ties	14	14.0	Kendall's Tau-a	0.09
Total	100	100.0		

Binary Logistic Regression: Currently Using versus Observability

Link Function: Logit

Response Information

Variable	Value	Count	
Currently Using e-learning	2	5	(Event)
	1	20	
	Total	25	

Logistic Regression Table

Predictor	Coef	SE Coef	Z	P	Odds Ratio	95% CI Lower	95% CI Upper
Constant	-0.281642	2.35529	-0.12	0.905			
Observability	-0.292529	0.618394	-0.47	0.636	0.75	0.22	2.51

Log-Likelihood = -12.398
Test that all slopes are zero: G = 0.223, DF = 1, P-Value = 0.637

Goodness-of-Fit Tests

Method	Chi-Square	DF	P
Pearson	12.7972	12	0.384
Deviance	14.3862	12	0.277
Hosmer-Lemeshow	7.9865	8	0.435

Table of Observed and Expected Frequencies:
(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)

	Group										
Value	1	2	3	4	5	6	7	8	9	10	Total
2											
Obs	0	0	1	0	2	1	0	0	1	0	5
Exp	0.3	0.7	0.5	0.4	0.8	0.4	0.7	0.5	0.5	0.3	
1											
Obs	2	4	2	2	2	1	3	2	1	1	20
Exp	1.7	3.3	2.5	1.6	3.2	1.6	2.3	1.5	1.5	0.7	
Total	2	4	3	2	4	2	3	2	2	1	25

Measures of Association:
(Between the Response Variable and Predicted Probabilities)

Pairs	Number	Percent	Summary Measures	
Concordant	58	58.0	Somers' D	0.21
Discordant	37	37.0	Goodman-Kruskal Gamma	0.22
Ties	5	5.0	Kendall's Tau-a	0.07
Total	100	100.0		

- **E-learning Readiness**

Binary Logistic Regression: Currently Using versus E-learning Readiness

Link Function: Logit

Response Information

Variable	Value	Count	
Currently Using e-learning	2	5	(Event)
	1	20	
	Total	25	

Logistic Regression Table

Predictor	Coef	SE Coef	Z	P	Odds Ratio	95% CI Lower	Upper
Constant	-12.8687	6.07003	-2.12	0.034			
E-learning Rediness	3.22165	1.60606	2.01	0.045	25.07	1.08	583.78

Log-Likelihood = -7.521
Test that all slopes are zero: G = 9.978, DF = 1, P-Value = 0.002

Goodness-of-Fit Tests

Method	Chi-Square	DF	P
Pearson	19.2136	17	0.316
Deviance	15.0418	17	0.592
Hosmer-Lemeshow	9.8971	8	0.272

Table of Observed and Expected Frequencies:
(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)

					Group						
Value	1	2	3	4	5	6	7	8	9	10	Total
2											
Obs	0	0	0	0	1	0	0	1	2	1	5
Exp	0.0	0.0	0.0	0.0	0.1	0.4	0.4	1.8	1.2	1.0	
1											
Obs	2	4	2	2	1	4	2	3	0	0	20
Exp	2.0	4.0	2.0	2.0	1.9	3.6	1.6	2.2	0.8	0.0	
Total	2	4	2	2	2	4	2	4	2	1	25

Measures of Association:
(Between the Response Variable and Predicted Probabilities)

Pairs	Number	Percent	Summary Measures	
Concordant	88	88.0	Somers' D	0.76
Discordant	12	12.0	Goodman-Kruskal Gamma	0.76
Ties	0	0.0	Kendall's Tau-a	0.25
Total	100	100.0		

- **Stages for AML Program**

Binary Logistic Regression: Currently Using versus Stages for AML Program

Link Function: Logit

Response Information

Variable	Value	Count	
Currently Using e-learning	2	5	(Event)
	1	20	
	Total	25	

Logistic Regression Table

Predictor	Coef	SE Coef	Z	P	Odds Ratio	95% CI Lower	Upper
Constant	-14.1189	9.75812	-1.45	0.148			
Stages for AML Program	2.83350	2.12125	1.34	0.182	17.00	0.27	1086.97

Log-Likelihood = -11.016
Test that all slopes are zero: G = 2.988, DF = 1, P-Value = 0.084

Goodness-of-Fit Tests

Method	Chi-Square	DF	P
Pearson	15.4482	13	0.280
Deviance	10.9416	13	0.616
Hosmer-Lemeshow	9.6404	8	0.291

Table of Observed and Expected Frequencies:
(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)

					Group						
Value	1	2	3	4	5	6	7	8	9	10	Total
2											
Obs	0	0	1	0	0	1	0	0	1	2	5
Exp	0.0	0.1	0.1	0.4	0.4	1.0	0.6	0.6	0.7	1.2	
1											
Obs	3	2	1	3	2	3	2	2	1	1	20
Exp	3.0	1.9	1.9	2.6	1.6	3.0	1.4	1.4	1.3	1.8	
Total	3	2	2	3	2	4	2	2	2	3	25

Measures of Association:
(Between the Response Variable and Predicted Probabilities)

Pairs	Number	Percent	Summary Measures	
Concordant	73	73.0	Somers' D	0.52
Discordant	21	21.0	Goodman-Kruskal Gamma	0.55
Ties	6	6.0	Kendall's Tau-a	0.17
Total	100	100.0		

- **Organization Characteristics**

Binary Logistic Regression: Currently Using versus Top Mgmt Support

Link Function: Logit

Response Information

Variable	Value	Count	
Currently Using e-learning	2	5	(Event)
	1	20	
	Total	25	

Logistic Regression Table

Predictor	Coef	SE Coef	Z	P	Odds Ratio	95% CI Lower	Upper
Constant	-5.49125	4.35167	-1.26	0.207			
Top Mgmt Support	0.962299	0.993289	0.97	0.333	2.62	0.37	18.34

Log-Likelihood = -11.993
Test that all slopes are zero: G = 1.035, DF = 1, P-Value = 0.309

Goodness-of-Fit Tests

Method	Chi-Square	DF	P
Pearson	11.9424	7	0.102
Deviance	10.6052	7	0.157
Hosmer-Lemeshow	6.2358	5	0.284

Table of Observed and Expected Frequencies:
(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)

	Group							
Value	1	2	3	4	5	6	7	Total
2								
Obs	0	2	0	0	0	2	1	5
Exp	0.3	0.8	0.6	0.4	0.5	2.1	0.3	
1								
Obs	3	4	4	2	2	5	0	20
Exp	2.7	5.2	3.4	1.6	1.5	4.9	0.7	
Total	3	6	4	2	2	7	1	25

Measures of Association:
(Between the Response Variable and Predicted Probabilities)

Pairs	Number	Percent	Summary Measures	
Concordant	56	56.0	Somers' D	0.26
Discordant	30	30.0	Goodman-Kruskal Gamma	0.30
Ties	14	14.0	Kendall's Tau-a	0.09
Total	100	100.0		

Binary Logistic Regression: Currently Using versus Championship

Link Function: Logit

Response Information

Variable	Value	Count	
Currently Using e-learning	2	5	(Event)
	1	20	
	Total	25	

Logistic Regression Table

Predictor	Coef	SE Coef	Z	P	Odds Ratio	95% CI Lower	Upper
Constant	-5.54352	3.38662	-1.64	0.102			
Championship	2.55459	1.99134	1.28	0.200	12.87	0.26	637.54

Log-Likelihood = -11.583
Test that all slopes are zero: G = 1.855, DF = 1, P-Value = 0.173

Goodness-of-Fit Tests

Method	Chi-Square	DF	P
Pearson	8.89249	4	0.064
Deviance	7.16109	4	0.128
Hosmer-Lemeshow	1.10180	2	0.576

Table of Observed and Expected Frequencies:
(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)

	Group				
Value	1	2	3	4	Total
2					
Obs	0	1	1	3	5
Exp	0.1	0.8	1.9	2.2	
1					
Obs	2	6	9	3	20
Exp	1.9	6.2	8.1	3.8	
Total	2	7	10	6	25

Measures of Association:
(Between the Response Variable and Predicted Probabilities)

Pairs	Number	Percent	Summary Measures	
Concordant	61	61.0	Somers' D	0.38
Discordant	23	23.0	Goodman-Kruskal Gamma	0.45
Ties	16	16.0	Kendall's Tau-a	0.13
Total	100	100.0		

Binary Logistic Regression: Currently Using versus Centralization

Link Function: Logit

Response Information

Variable	Value	Count	
Currently Using e-learning	2	5	(Event)
	1	20	
	Total	25	

Logistic Regression Table

Predictor	Coef	SE Coef	Z	P	Odds Ratio	95% CI Lower	95% CI Upper
Constant	-4.37502	3.52187	-1.24	0.214			
Centralization	0.702622	0.802328	0.88	0.381	2.02	0.42	9.73

Log-Likelihood = -12.100
Test that all slopes are zero: G = 0.821, DF = 1, P-Value = 0.365

Goodness-of-Fit Tests

Method	Chi-Square	DF	P
Pearson	0.80213	1	0.370
Deviance	1.15648	1	0.282
Hosmer-Lemeshow	0.80213	1	0.370

Table of Observed and Expected Frequencies:
(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)

	Group			
Value	1	2	3	Total
2				
Obs	0	3	2	5
Exp	0.4	2.2	2.4	
1				
Obs	4	10	6	20
Exp	3.6	10.8	5.6	
Total	4	13	8	25

Measures of Association:
(Between the Response Variable and Predicted Probabilities)

Pairs	Number	Percent	Summary Measures	
Concordant	40	40.0	Somers' D	0.22
Discordant	18	18.0	Goodman-Kruskal Gamma	0.38
Ties	42	42.0	Kendall's Tau-a	0.07
Total	100	100.0		

Binary Logistic Regression: Currently Using versus Formalization

Link Function: Logit

Response Information

Variable	Value	Count	
Currently Using e-learning	2	5	(Event)
	1	20	
	Total	25	

Logistic Regression Table

Predictor	Coef	SE Coef	Z	P	Odds Ratio	95% CI Lower	95% CI Upper
Constant	-1.96017	2.52121	-0.78	0.437			
Formalization	0.453684	1.93983	0.23	0.815	1.57	0.04	70.51

Log-Likelihood = -12.483
Test that all slopes are zero: G = 0.055, DF = 1, P-Value = 0.815

Goodness-of-Fit Tests

Method	Chi-Square	DF	P
Pearson	4.19329	4	0.380
Deviance	5.03180	4	0.284
Hosmer-Lemeshow	4.19329	4	0.380

Table of Observed and Expected Frequencies:
(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)

	Group						
Value	1	2	3	4	5	6	Total
2							
Obs	1	0	2	0	2	0	5
Exp	0.3	0.7	2.1	0.4	1.1	0.2	
1							
Obs	1	4	9	2	3	1	20
Exp	1.7	3.3	8.9	1.6	3.9	0.8	
Total	2	4	11	2	5	1	25

Measures of Association:
(Between the Response Variable and Predicted Probabilities)

Pairs	Number	Percent	Summary Measures	
Concordant	42	42.0	Somers' D	0.09
Discordant	33	33.0	Goodman-Kruskal Gamma	0.12
Ties	25	25.0	Kendall's Tau-a	0.03
Total	100	100.0		

Binary Logistic Regression: Currently Using versus Internal Influence

Link Function: Logit

Response Information

Variable	Value	Count	
Currently Using e-learning	2	5	(Event)
	1	20	
	Total	25	

Logistic Regression Table

Predictor	Coef	SE Coef	Z	P	Odds Ratio	95% CI Lower	Upper
Constant	-2.81088	2.28785	-1.23	0.219			
Internal Influence	0.353094	0.538531	0.66	0.512	1.42	0.50	4.09

Log-Likelihood = -12.273
Test that all slopes are zero: G = 0.473, DF = 1, P-Value = 0.492

Goodness-of-Fit Tests

Method	Chi-Square	DF	P
Pearson	0.427414	3	0.935
Deviance	0.608147	3	0.895
Hosmer-Lemeshow	0.426819	2	0.808

Table of Observed and Expected Frequencies:
(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)

	Group				
Value	1	2	3	4	Total
2					
Obs	0	1	2	2	5
Exp	0.2	0.9	1.6	2.3	
1					
Obs	2	5	6	7	20
Exp	1.8	5.1	6.4	6.7	
Total	2	6	8	9	25

Measures of Association:
(Between the Response Variable and Predicted Probabilities)

Pairs	Number	Percent	Summary Measures	
Concordant	42	42.0	Somers' D	0.15
Discordant	27	27.0	Goodman-Kruskal Gamma	0.22
Ties	31	31.0	Kendall's Tau-a	0.05
Total	100	100.0		

Binary Logistic Regression: Currently Using versus External Influence

Link Function: Logit

Response Information

Variable	Value	Count	
Currently Using e-learning	2	5	(Event)
	1	20	
	Total	25	

Logistic Regression Table

Predictor	Coef	SE Coef	Z	P	Odds Ratio	95% CI Lower	95% CI Upper
Constant	-2.11391	1.88266	-1.12	0.262			
External Influence	0.534876	1.31073	0.41	0.683	1.71	0.13	22.28

Log-Likelihood = -12.425
Test that all slopes are zero: G = 0.170, DF = 1, P-Value = 0.680

Goodness-of-Fit Tests

Method	Chi-Square	DF	P
Pearson	5.55594	6	0.475
Deviance	7.02987	6	0.318
Hosmer-Lemeshow	5.55521	5	0.352

Table of Observed and Expected Frequencies:
(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)

	Group							
Value	1	2	3	4	5	6	7	Total
2								
Obs	0	1	1	2	0	0	1	5
Exp	0.4	0.7	0.9	0.8	0.9	0.7	0.5	
1								
Obs	3	3	4	2	4	3	1	20
Exp	2.6	3.3	4.1	3.2	3.1	2.3	1.5	
Total	3	4	5	4	4	3	2	25

Measures of Association:
(Between the Response Variable and Predicted Probabilities)

Pairs	Number	Percent	Summary Measures	
Concordant	48	48.0	Somers' D	0.08
Discordant	40	40.0	Goodman-Kruskal Gamma	0.09
Ties	12	12.0	Kendall's Tau-a	0.03
Total	100	100.0		

Binary Logistic Regression: Currently Using versus Organization Slack

Link Function: Logit

Response Information

Variable	Value	Count	
Currently Using e-learning	2	5	(Event)
	1	20	
	Total	25	

Logistic Regression Table

Predictor	Coef	SE Coef	Z	P	Odds Ratio	95% CI Lower	95% CI Upper
Constant	-6.63424	3.55776	-1.86	0.062			
Organization Slack	1.22670	0.782684	1.57	0.117	3.41	0.74	15.81

```
Log-Likelihood = -10.937
Test that all slopes are zero: G = 3.147, DF = 1, P-Value = 0.076


Goodness-of-Fit Tests

Method           Chi-Square  DF      P
Pearson             1.10419   1  0.293
Deviance            1.41845   1  0.234
Hosmer-Lemeshow     1.10419   1  0.293


Table of Observed and Expected Frequencies:
(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)

           Group
Value    1    2    3  Total
2
  Obs    0    2    3      5
  Exp  0.4  1.2  3.4
1
  Obs    8    6    6     20
  Exp  7.6  6.8  5.6
Total    8    8    9     25


Measures of Association:
(Between the Response Variable and Predicted Probabilities)

Pairs       Number  Percent  Summary Measures
Concordant      58     58.0  Somers' D              0.46
Discordant      12     12.0  Goodman-Kruskal Gamma  0.66
Ties            30     30.0  Kendall's Tau-a        0.15
Total          100    100.0
```

- **Environmental Characteristics**

Binary Logistic Regression: Currently Using versus External Pressure

```
Link Function: Logit


Response Information

Variable                    Value  Count
Currently Using e-learning  2          5  (Event)
                            1         20
                            Total     25


Logistic Regression Table

                                                          Odds     95% CI
Predictor               Coef  SE Coef      Z      P  Ratio  Lower  Upper
Constant           -1.38629  3.13374  -0.44  0.658
External Pressure  0.0000000  2.20971   0.00  1.000   1.00   0.01  76.02


Log-Likelihood = -12.510
Test that all slopes are zero: G = 0.000, DF = 1, P-Value = 1.000


Goodness-of-Fit Tests
```

Method	Chi-Square	DF	P
Pearson	1.58730	4	0.811
Deviance	2.10561	4	0.716
Hosmer-Lemeshow	1.58730	3	0.662

Table of Observed and Expected Frequencies:
(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)

	Group					
Value	1	2	3	4	5	Total
2						
Obs	0	2	1	2	0	5
Exp	0.4	1.2	1.4	1.8	0.2	
1						
Obs	2	4	6	7	1	20
Exp	1.6	4.8	5.6	7.2	0.8	
Total	2	6	7	9	1	25

Measures of Association:
(Between the Response Variable and Predicted Probabilities)

Pairs	Number	Percent	Summary Measures	
Concordant	0	0.0	Somers' D	0.00
Discordant	0	0.0	Goodman-Kruskal Gamma	*
Ties	100	100.0	Kendall's Tau-a	0.00
Total	100	100.0		

Binary Logistic Regression: Currently Using versus Competition

Link Function: Logit

Response Information

Variable	Value	Count	
Currently Using e-learning	2	5	(Event)
	1	20	
	Total	25	

Logistic Regression Table

					Odds	95% CI	
Predictor	Coef	SE Coef	Z	P	Ratio	Lower	Upper
Constant	-4.46112	3.26822	-1.37	0.172			
Competition	0.805343	0.819780	0.98	0.326	2.24	0.45	11.16

Log-Likelihood = -11.920
Test that all slopes are zero: G = 1.180, DF = 1, P-Value = 0.277

Goodness-of-Fit Tests

Method	Chi-Square	DF	P
Pearson	1.11853	2	0.572
Deviance	1.12674	2	0.569
Hosmer-Lemeshow	1.11853	2	0.572

Table of Observed and Expected Frequencies:
(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)

		Group			
Value	1	2	3	4	Total
2					
Obs	0	1	3	1	5
Exp	0.2	0.5	3.6	0.8	
1					
Obs	3	3	13	1	20
Exp	2.8	3.5	12.4	1.2	
Total	3	4	16	2	25

Measures of Association:
(Between the Response Variable and Predicted Probabilities)

Pairs	Number	Percent	Summary Measures	
Concordant	40	40.0	Somers' D	0.23
Discordant	17	17.0	Goodman-Kruskal Gamma	0.40
Ties	43	43.0	Kendall's Tau-a	0.08
Total	100	100.0		

Binary Logistic Regression: Currently Using versus Coercive Influence

Link Function: Logit

Response Information

Variable	Value	Count	
Currently Using e-learning	2	5	(Event)
	1	20	
	Total	25	

Logistic Regression Table

Predictor	Coef	SE Coef	Z	P	Odds Ratio	95% CI Lower	Upper
Constant	0.489109	1.93489	0.25	0.800			
Coercive Influence	-0.460207	0.470434	-0.98	0.328	0.63	0.25	1.59

Log-Likelihood = -12.037
Test that all slopes are zero: G = 0.945, DF = 1, P-Value = 0.331

Goodness-of-Fit Tests

Method	Chi-Square	DF	P
Pearson	4.26836	2	0.118
Deviance	6.07992	2	0.048
Hosmer-Lemeshow	4.26836	2	0.118

Table of Observed and Expected Frequencies:
(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)

	Group				
Value	1	2	3	4	Total

```
2
  Obs     3    0    1    1      5
  Exp   1.7  1.6  1.2  0.5
1
  Obs     9    8    3    0     20
  Exp  10.3  6.4  2.8  0.5
Total    12    8    4    1     25


Measures of Association:
(Between the Response Variable and Predicted Probabilities)

Pairs       Number  Percent  Summary Measures
Concordant      37     37.0  Somers' D              0.04
Discordant      33     33.0  Goodman-Kruskal Gamma  0.06
Ties            30     30.0  Kendall's Tau-a        0.01
Total          100    100.0
```

- **Degree of Adoption**

```
Binary Logistic Regression: Currently Using  versus Degree of Adoption

Link Function: Logit


Response Information

Variable                    Value  Count
Currently Using e-learning  2          5  (Event)
                            1         20
                            Total     25


Logistic Regression Table

                                                          Odds     95% CI
Predictor               Coef   SE Coef      Z      P  Ratio  Lower  Upper
Constant           -6.29200   3.22680  -1.95  0.051
Degree of Adoption  1.35385  0.849337   1.59  0.111   3.87   0.73  20.46


Log-Likelihood = -10.975
Test that all slopes are zero: G = 3.070, DF = 1, P-Value = 0.080


Goodness-of-Fit Tests

Method           Chi-Square  DF      P
Pearson             38.8612   6  0.000
Deviance            12.0443   6  0.061
Hosmer-Lemeshow     10.2055   4  0.037


Table of Observed and Expected Frequencies:
(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)

                  Group
Value    1    2    3    4    5    6  Total
2
  Obs    1    0    0    1    1    2      5
  Exp  0.1  0.4  0.9  1.3  1.2  1.2
1
  Obs    2    4    6    5    3    0     20
```

```
  Exp  2.9  3.6  5.1  4.7  2.8  0.8
Total    3    4    6    6    4    2     25


Measures of Association:
(Between the Response Variable and Predicted Probabilities)

Pairs       Number  Percent  Summary Measures
Concordant      69     69.0  Somers' D              0.46
Discordant      23     23.0  Goodman-Kruskal Gamma  0.50
Ties             8      8.0  Kendall's Tau-a        0.15
Total          100    100.0
```

Appendix B – 8: Analysis of Variance for E-learning Readiness Questions (UEL vs. NEL)

One-way ANOVA: Q. How well is the bank using (Internet and Intranet) technology to run its business? versus Currently Using e-learning

```
Source            DF     SS    MS     F      P
Currently Using    1   5.29  5.29  2.35  0.139
Error             23  51.75  2.25
Total             24  57.04

S = 1.5   R-Sq = 9.27%   R-Sq(adj) = 5.33%


                          Individual 95% CIs For Mean Based on
                          Pooled StDev
Level   N   Mean  StDev  ------+---------+---------+---------+---
1      20  3.050  1.605  (-----*------)
2       5  4.200  0.837      (-------------*-------------)
                          ------+---------+---------+---------+---
                              3.0       4.0       5.0       6.0

Pooled StDev = 1.500
```

One-way ANOVA: Q. How prepared (skills, knowledge, motivation) is your workforce to compete and win in the high-tech, new economy? versus Currently Using e-learning

```
Source            DF     SS    MS     F      P
Currently Using    1   0.81  0.81  0.56  0.462
Error             23  33.35  1.45
Total             24  34.16

S = 1.204   R-Sq = 2.37%   R-Sq(adj) = 0.00%


                          Individual 95% CIs For Mean Based on
                          Pooled StDev
Level   N   Mean  StDev  -----+---------+---------+---------+----
1      20  3.350  1.268    (--------*--------)
2       5  3.800  0.837  (-----------------*------------------)
                          -----+---------+---------+---------+----
                             3.00      3.60      4.20      4.80

Pooled StDev = 1.204
```

One-way ANOVA: Q. How the bank does define “e-learning?” versus Currently Using e-learning

```
Source            DF      SS     MS     F      P
Currently Using    1   5.290  5.290  8.85  0.007
Error             23  13.750  0.598
Total             24  19.040

S = 0.7732   R-Sq = 27.78%   R-Sq(adj) = 24.64%


                           Individual 95% CIs For Mean Based on
                           Pooled StDev
Level   N    Mean   StDev  -----+---------+---------+---------+----
1      20  3.0500  0.8256  (-----*-----)
2       5  4.2000  0.4472              (-----------*-----------)
                           -----+---------+---------+---------+----
                              3.00      3.60      4.20      4.80

Pooled StDev = 0.7732
```

One-way ANOVA: Q. How will the bank overcomes any bad prior experiences you and others have had with technology based learning? versus Currently Using e-learning

```
Source            DF     SS    MS     F      P
Currently Using    1   9.00  9.00  6.68  0.017
Error             23  31.00  1.35
Total             24  40.00

S = 1.161   R-Sq = 22.50%   R-Sq(adj) = 19.13%


                         Individual 95% CIs For Mean Based on
                         Pooled StDev
Level   N   Mean  StDev    +---------+---------+---------+---------
1      20  2.900  1.252    (-----*------)
2       5  4.400  0.548               (------------*------------)
                         +---------+---------+---------+---------
                        2.40      3.20      4.00      4.80

Pooled StDev = 1.161
```

One-way ANOVA: Q. How much access do people have to the web (anyone, any time, anywhere)? versus Currently Using e-learning

```
Source            DF      SS     MS     F      P
Currently Using    1   3.610  3.610  4.90  0.037
Error             23  16.950  0.737
Total             24  20.560

S = 0.8585   R-Sq = 17.56%   R-Sq(adj) = 13.97%


                           Individual 95% CIs For Mean Based on
                           Pooled StDev
Level   N    Mean   StDev  ------+---------+---------+---------+---
1      20  3.0500  0.7592  (------*-----)
2       5  4.0000  1.2247           (-------------*------------)
                           ------+---------+---------+---------+---
                               3.00      3.60      4.20      4.80
```

```
Pooled StDev = 0.8585
```

One-way ANOVA: Q. Do you differentiate between instructional needs (training) and informational needs (knowledge management), and do you make the right decisions about when to use each? versus Currently Using e-learning

```
Source            DF      SS     MS     F      P
Currently Using    1   2.560  2.560  2.78  0.109
Error             23  21.200  0.922
Total             24  23.760

S = 0.9601   R-Sq = 10.77%   R-Sq(adj) = 6.90%


                           Individual 95% CIs For Mean Based on
                           Pooled StDev
Level   N    Mean   StDev  ----+---------+---------+---------+-----
1      20  3.2000  1.0052  (------*-------)
2       5  4.0000  0.7071        (--------------*-------------)
                           ----+---------+---------+---------+-----
                             3.00      3.60      4.20      4.80

Pooled StDev = 0.9601
```

One-way ANOVA: Q. What is the level of the bank's expertise in instructional and information design? versus Currently Using e-learning

```
Source            DF      SS     MS      F      P
Currently Using    1   5.760  5.760  15.05  0.001
Error             23   8.800  0.383
Total             24  14.560

S = 0.6186   R-Sq = 39.56%   R-Sq(adj) = 36.93%


                           Individual 95% CIs For Mean Based on
                           Pooled StDev
Level   N    Mean   StDev  -----+---------+---------+---------+----
1      20  3.0000  0.6489  (----*----)
2       5  4.2000  0.4472                (---------*---------)
                           -----+---------+---------+---------+----
                              3.00      3.60      4.20      4.80

Pooled StDev = 0.6186
```

One-way ANOVA: Q. Is the bank ready to move beyond a predominant reliance on classroom training to a more balanced approach with e-learning? versus Currently Using e-learning

```
Source            DF     SS    MS     F      P
Currently Using    1   6.76  6.76  4.07  0.055
Error             23  38.20  1.66
Total             24  44.96

S = 1.289   R-Sq = 15.04%   R-Sq(adj) = 11.34%


                         Individual 95% CIs For Mean Based on
                         Pooled StDev
```

```
Level   N   Mean  StDev  ----+---------+---------+---------+-----
1      20  2.700  1.342  (-------*------)
2       5  4.000  1.000           (--------------*--------------)
                          ----+---------+---------+---------+-----
                            2.40      3.20      4.00      4.80

Pooled StDev = 1.289
```

One-way ANOVA: Q. Does senior management support e-learning? versus Currently Using e-learning

```
Source            DF      SS     MS      F      P
Currently Using    1   8.410  8.410  12.60  0.002
Error             23  15.350  0.667
Total             24  23.760

S = 0.8169   R-Sq = 35.40%   R-Sq(adj) = 32.59%


                          Individual 95% CIs For Mean Based on
                          Pooled StDev
Level   N    Mean   StDev  --------+---------+---------+---------+-
1      20  3.3500  0.8751  (-----*----)
2       5  4.8000  0.4472                (----------*---------)
                          --------+---------+---------+---------+-
                                3.50      4.20      4.90      5.60

Pooled StDev = 0.8169
```

One-way ANOVA: Q. Does the bank have a Change management plan for introducing e-learning? versus Currently Using e-learning

```
Source            DF     SS    MS     F      P
Currently Using    1   5.29  5.29  4.26  0.050
Error             23  28.55  1.24
Total             24  33.84

S = 1.114   R-Sq = 15.63%   R-Sq(adj) = 11.96%


                         Individual 95% CIs For Mean Based on
                         Pooled StDev
Level   N   Mean  StDev  -------+---------+---------+---------+--
1      20  2.850  1.182  (-------*------)
2       5  4.000  0.707           (--------------*--------------)
                         -------+---------+---------+---------+--
                              2.80      3.50      4.20      4.90

Pooled StDev = 1.114
```

One-way ANOVA: Q. Can the bank demonstrate the business benefits of e-learning? versus Currently Using e-learning

```
Source            DF     SS    MS     F      P
Currently Using    1   1.96  1.96  1.65  0.212
Error             23  27.40  1.19
Total             24  29.36

S = 1.091   R-Sq = 6.68%   R-Sq(adj) = 2.62%
```

```
                          Individual 95% CIs For Mean Based on
                          Pooled StDev
Level   N   Mean  StDev  ---+---------+---------+---------+------
1      20  2.700  1.031  (-------*-------)
2       5  3.400  1.342     (-----------------*---------------)
                          ---+---------+---------+---------+------
                           2.40      3.00      3.60      4.20

Pooled StDev = 1.091
```

One-way ANOVA: Q. Does the bank have a plan to help the training function reinvent itself for the digital age? versus Currently Using e-learning

```
Source            DF     SS    MS     F      P
Currently Using    1   7.84  7.84  5.50  0.028
Error             23  32.80  1.43
Total             24  40.64

S = 1.194   R-Sq = 19.29%   R-Sq(adj) = 15.78%


                          Individual 95% CIs For Mean Based on
                          Pooled StDev
Level   N   Mean  StDev  ----+---------+---------+---------+-----
1      20  2.600  1.273  (-----*------)
2       5  4.000  0.707           (-------------*-------------)
                          ----+---------+---------+---------+-----
                            2.40      3.20      4.00      4.80

Pooled StDev = 1.194
```

One-way ANOVA: Q. What is the climate in the bank to learning in alternative locations, especially the work site? versus Currently Using e-learning

```
Source            DF      SS     MS     F      P
Currently Using    1   7.290  7.290  9.66  0.005
Error             23  17.350  0.754
Total             24  24.640

S = 0.8685   R-Sq = 29.59%   R-Sq(adj) = 26.52%


                            Individual 95% CIs For Mean Based on
                            Pooled StDev
Level   N    Mean   StDev  -----+---------+---------+---------+----
1      20  2.8500  0.8751  (-----*----)
2       5  4.2000  0.8367               (----------*----------)
                            -----+---------+---------+---------+----
                               2.80      3.50      4.20      4.90

Pooled StDev = 0.8685
```

One-way ANOVA: Q. Is the bank willing to allow e-learning to thrive, perhaps at the expense of some of the more traditional parts of the training organization? versus Currently Using e-learning

```
Source            DF      SS     MS     F      P
Currently Using    1   7.290  7.290  7.85  0.010
```

```
Error             23  21.350  0.928
Total             24  28.640

S = 0.9635   R-Sq = 25.45%   R-Sq(adj) = 22.21%


                          Individual 95% CIs For Mean Based on
                          Pooled StDev
Level   N    Mean   StDev  ------+---------+---------+---------+---
1      20  2.8500  0.9881  (------*-----)
2       5  4.2000  0.8367              (------------*------------)
                          ------+---------+---------+---------+---
                              2.80      3.50      4.20      4.90

Pooled StDev = 0.9635
```

One-way ANOVA: Q. How prepared is the bank to invest in, and incubate e learning for several years in order to get it firmly established? versus Currently Using e-learning

```
Source            DF     SS    MS     F      P
Currently Using    1   8.41  8.41  6.68  0.017
Error             23  28.95  1.26
Total             24  37.36

S = 1.122   R-Sq = 22.51%   R-Sq(adj) = 19.14%


                          Individual 95% CIs For Mean Based on
                          Pooled StDev
Level   N   Mean  StDev  -----+---------+---------+---------+----
1      20  2.550  1.191  (------*-----)
2       5  4.000  0.707             (------------*------------)
                          -----+---------+---------+---------+----
                             2.40      3.20      4.00      4.80

Pooled StDev = 1.122
```

One-way ANOVA: Q. How prepared is the bank to deal with a large and increasingly complex e-learning marketplace? versus Currently Using e-learning

```
Source            DF     SS    MS     F      P
Currently Using    1   4.84  4.84  3.59  0.071
Error             23  31.00  1.35
Total             24  35.84

S = 1.161   R-Sq = 13.50%   R-Sq(adj) = 9.74%


                          Individual 95% CIs For Mean Based on
                          Pooled StDev
Level   N   Mean  StDev  ---------+---------+---------+---------+
1      20  2.700  1.218  (-------*------)
2       5  3.800  0.837          (--------------*---------------)
                          ---------+---------+---------+---------+
                                 2.80      3.50      4.20      4.90

Pooled StDev = 1.161
```

One-way ANOVA: Q. Does the bank have a good handle on what it is buying in the e-learning marketplace – can it differentiate quality products and weed out redundancies? versus Currently Using e-learning

```
Source            DF     SS    MS     F      P
Currently Using    1   9.61  9.61  7.43  0.012
Error             23  29.75  1.29
Total             24  39.36

S = 1.137   R-Sq = 24.42%   R-Sq(adj) = 21.13%


                          Individual 95% CIs For Mean Based on
                          Pooled StDev
Level   N   Mean  StDev   -+---------+---------+---------+--------
1      20  2.850  1.226   (------*-----)
2       5  4.400  0.548                (------------*------------)
                          -+---------+---------+---------+--------
                          2.40      3.20      4.00      4.80

Pooled StDev = 1.137
```

One-way ANOVA: Q. Is the bank prepared to outsource some of its functions and manage them externally so that it can concentrate its resources on more valuable areas? versus Currently Using e-learning

```
Source            DF     SS    MS     F      P
Currently Using    1   0.81  0.81  0.53  0.473
Error             23  34.95  1.52
Total             24  35.76

S = 1.233   R-Sq = 2.27%   R-Sq(adj) = 0.00%


                          Individual 95% CIs For Mean Based on
                          Pooled StDev
Level   N   Mean  StDev   ---------+---------+---------+---------+
1      20  2.550  1.146     (--------*---------)
2       5  3.000  1.581  (-------------------*------------------)
                          ---------+---------+---------+---------+
                                 2.40      3.00      3.60      4.20

Pooled StDev = 1.233
```

One-way ANOVA: Q. How committed are you, personally, to e-learning? Are you ready? versus Currently Using e-learning

```
Source            DF     SS    MS     F      P
Currently Using    1   5.76  5.76  4.73  0.040
Error             23  28.00  1.22
Total             24  33.76

S = 1.103   R-Sq = 17.06%   R-Sq(adj) = 13.46%


                          Individual 95% CIs For Mean Based on
                          Pooled StDev
Level   N   Mean  StDev   ---------+---------+---------+---------+
1      20  3.400  1.188   (-------*------)
```

```
2       5  4.600  0.548            (--------------*-------------)
                           ---------+---------+---------+---------+
                                  3.50      4.20      4.90      5.60

Pooled StDev = 1.103
```

Appendix B – 9: Analysis of Variance for E-learning Readiness Questions (CG1 vs. CG2)

One-way ANOVA: Q. How well is the bank using (Internet and Intranet) technology to run its business? versus K-means Clustering groups

```
Source              DF     SS    MS     F      P
K-means Clustering   1   8.17  8.17  4.77  0.040
Error               22  37.67  1.71
Total               23  45.83

S = 1.308   R-Sq = 17.82%   R-Sq(adj) = 14.08%


                            Individual 95% CIs For Mean Based on
                            Pooled StDev
Level     N   Mean  StDev   -+---------+---------+---------+--------
Group 1  12  4.000  0.953                    (----------*----------)
Group 2  12  2.833  1.586   (----------*-----------)
                            -+---------+---------+---------+--------
                           2.10      2.80      3.50      4.20

Pooled StDev = 1.308
```

One-way ANOVA: Q. How prepared (skills, knowledge, motivation) is your workforce to compete and win in the high-tech, new economy? versus K-means Clustering groups

```
Source               DF     SS    MS     F      P
K-means Clustering    1   3.38  3.38  2.43  0.133
Error                22  30.58  1.39
Total                23  33.96

S = 1.179   R-Sq = 9.94%   R-Sq(adj) = 5.84%


                            Individual 95% CIs For Mean Based on
                            Pooled StDev
Level     N   Mean  StDev    +---------+---------+---------+---------
Group 1  12  3.833  0.835               (-----------*-----------)
Group 2  12  3.083  1.443    (----------*-----------)
                            +---------+---------+---------+---------
                           2.40      3.00      3.60      4.20

Pooled StDev = 1.179
```

One-way ANOVA: Q. How the bank does define "e-learning?" versus K-means Clustering groups

```
Source              DF      SS     MS     F      P
K-means Clustering   1   5.042  5.042  7.97  0.010
Error               22  13.917  0.633
Total               23  18.958

S = 0.7953   R-Sq = 26.59%   R-Sq(adj) = 23.26%
```

```
                              Individual 95% CIs For Mean Based on
                              Pooled StDev
Level     N    Mean   StDev  ---+---------+---------+---------+------
Group 1  12  3.7500  0.7538                    (---------*---------)
Group 2  12  2.8333  0.8348  (---------*--------)
                              ---+---------+---------+---------+------
                               2.50      3.00      3.50      4.00

Pooled StDev = 0.7953
```

One-way ANOVA: Q. How will the bank overcomes any bad prior experiences you and others have had with technology based learning? versus K-means Clustering groups

```
Source              DF     SS    MS     F      P
K-means Clustering   1   2.04  2.04  1.18  0.288
Error               22  37.92  1.72
Total               23  39.96

S = 1.313   R-Sq = 5.11%   R-Sq(adj) = 0.80%


                              Individual 95% CIs For Mean Based on
                              Pooled StDev
Level     N   Mean  StDev  ----+---------+---------+---------+-----
Group 1  12  3.500  1.382           (------------*------------)
Group 2  12  2.917  1.240  (------------*------------)
                              ----+---------+---------+---------+-----
                                2.40      3.00      3.60      4.20

Pooled StDev = 1.313
```

One-way ANOVA: Q. How much access do people have to the web (anyone, any time, anywhere)? versus K-means Clustering groups

```
Source              DF      SS     MS     F      P
K-means Clustering   1   1.500  1.500  1.74  0.201
Error               22  19.000  0.864
Total               23  20.500

S = 0.9293   R-Sq = 7.32%   R-Sq(adj) = 3.10%


                              Individual 95% CIs For Mean Based on
                              Pooled StDev
Level     N    Mean   StDev   -+---------+---------+---------+--------
Group 1  12  3.5000  1.0000             (----------*----------)
Group 2  12  3.0000  0.8528   (----------*----------)
                               -+---------+---------+---------+--------
                              2.50      3.00      3.50      4.00

Pooled StDev = 0.9293
```

One-way ANOVA: Q. Do you differentiate between instructional needs (training) and informational needs (knowledge management), and do you make the right decisions about when to use each? versus K-means Clustering groups

```
Source              DF     SS    MS     F      P
K-means Clustering   1   1.04  1.04  1.01  0.325
Error               22  22.58  1.03
Total               23  23.63

S = 1.013   R-Sq = 4.41%   R-Sq(adj) = 0.06%


                            Individual 95% CIs For Mean Based on
                            Pooled StDev
Level     N   Mean  StDev  ---------+---------+---------+---------+
Group 1  12  3.583  0.900           (-----------*-----------)
Group 2  12  3.167  1.115  (-----------*-----------)
                            ---------+---------+---------+---------+
                                   3.00      3.50      4.00      4.50

Pooled StDev = 1.013
```

One-way ANOVA: Q. What is the level of the bank's expertise in instructional and information design? versus K-means Clustering groups

```
Source               DF      SS     MS     F      P
K-means Clustering    1   2.667  2.667  4.96  0.037
Error                22  11.833  0.538
Total                23  14.500

S = 0.7334   R-Sq = 18.39%   R-Sq(adj) = 14.68%


                              Individual 95% CIs For Mean Based on
                              Pooled StDev
Level     N    Mean   StDev  --------+---------+---------+---------+-
Group 1  12  3.5833  0.7930                   (----------*----------)
Group 2  12  2.9167  0.6686  (----------*----------)
                              --------+---------+---------+---------+-
                                    2.80      3.20      3.60      4.00

Pooled StDev = 0.7334
```

One-way ANOVA: Q. Is the bank ready to move beyond a predominant reliance on classroom training to a more balanced approach with e-learning? versus K-means Clustering groups

```
Source               DF     SS    MS     F      P
K-means Clustering    1   5.04  5.04  2.78  0.110
Error                22  39.92  1.81
Total                23  44.96

S = 1.347   R-Sq = 11.21%   R-Sq(adj) = 7.18%


                            Individual 95% CIs For Mean Based on
                            Pooled StDev
Level     N   Mean  StDev  ------+---------+---------+---------+---
Group 1  12  3.417  1.240              (-----------*----------)
Group 2  12  2.500  1.446  (-----------*----------)
```

```
                              ------+---------+---------+---------+---
                                  2.10      2.80      3.50      4.20

Pooled StDev = 1.347
```

One-way ANOVA: Q. Does senior management support e-learning? versus K-means Clustering groups

```
Source               DF      SS     MS     F      P
K-means Clustering   1   4.167  4.167  4.78  0.040
Error                22  19.167  0.871
Total                23  23.333

S = 0.9334   R-Sq = 17.86%   R-Sq(adj) = 14.12%


                              Individual 95% CIs For Mean Based on
                              Pooled StDev
Level     N    Mean   StDev  ------+---------+---------+---------+---
Group 1  12  4.0833  0.9003                (-----------*----------)
Group 2  12  3.2500  0.9653  (-----------*----------)
                              ------+---------+---------+---------+---
                                  3.00      3.50      4.00      4.50

Pooled StDev = 0.9334
```

One-way ANOVA: Q. Does the bank have a Change management plan for introducing e-learning? versus K-means Clustering groups

```
Source               DF     SS    MS     F      P
K-means Clustering   1   5.04  5.04  4.02  0.057
Error                22  27.58  1.25
Total                23  32.63

S = 1.120   R-Sq = 15.45%   R-Sq(adj) = 11.61%


                             Individual 95% CIs For Mean Based on
                             Pooled StDev
Level     N   Mean  StDev  -------+---------+---------+---------+--
Group 1  12  3.583  0.793                (----------*----------)
Group 2  12  2.667  1.371  (----------*-----------)
                             -------+---------+---------+---------+--
                                  2.40      3.00      3.60      4.20

Pooled StDev = 1.120
```

One-way ANOVA: Q. Can the bank demonstrate the business benefits of e-learning? versus K-means Clustering groups

```
Source               DF      SS     MS     F      P
K-means Clustering   1   7.042  7.042  7.18  0.014
Error                22  21.583  0.981
Total                23  28.625

S = 0.9905   R-Sq = 24.60%   R-Sq(adj) = 21.17%


                              Individual 95% CIs For Mean Based on
```

```
                              Pooled StDev
Level     N    Mean   StDev   -+---------+---------+---------+--------
Group 1  12  3.4167  0.9003                    (---------*---------)
Group 2  12  2.3333  1.0731   (---------*---------)
                              -+---------+---------+---------+--------
                             1.80      2.40      3.00      3.60

Pooled StDev = 0.9905
```

One-way ANOVA: Q. Does the bank have a plan to help the training function reinvent itself for the digital age? versus K-means Clustering groups

```
Source              DF     SS     MS     F      P
K-means Clustering   1  12.04  12.04  9.27  0.006
Error               22  28.58   1.30
Total               23  40.63

S = 1.140   R-Sq = 29.64%   R-Sq(adj) = 26.44%


                              Individual 95% CIs For Mean Based on
                              Pooled StDev
Level     N   Mean  StDev  ---------+---------+---------+---------+
Group 1  12  3.583  0.793                      (---------*---------)
Group 2  12  2.167  1.403  (---------*---------)
                            ---------+---------+---------+---------+
                                   2.10      2.80      3.50      4.20

Pooled StDev = 1.140
```

One-way ANOVA: Q. What is the climate in the bank to learning in alternative locations, especially the work site? versus K-means Clustering groups

```
Source               DF      SS     MS     F      P
K-means Clustering    1   5.042  5.042  7.44  0.012
Error                22  14.917  0.678
Total                23  19.958

S = 0.8234   R-Sq = 25.26%   R-Sq(adj) = 21.86%


                              Individual 95% CIs For Mean Based on
                              Pooled StDev
Level     N    Mean   StDev  -----+---------+---------+---------+----
Group 1  12  3.6667  0.8876                     (---------*---------)
Group 2  12  2.7500  0.7538  (---------*---------)
                              -----+---------+---------+---------+----
                                 2.50      3.00      3.50      4.00

Pooled StDev = 0.8234
```

One-way ANOVA: Q. Is the bank willing to allow e-learning to thrive, perhaps at the expense of some of the more traditional parts of the training organization? versus K-means Clustering groups

```
Source              DF      SS     MS     F      P
K-means Clustering   1   5.042  5.042  5.86  0.024
Error               22  18.917  0.860
Total               23  23.958
```

```
S = 0.9273   R-Sq = 21.04%   R-Sq(adj) = 17.45%

                            Individual 95% CIs For Mean Based on
                            Pooled StDev
Level     N    Mean   StDev  ---+---------+---------+---------+------
Group 1  12  3.6667  0.9847                (--------*--------)
Group 2  12  2.7500  0.8660  (--------*--------)
                            ---+---------+---------+---------+------
                             2.40      3.00      3.60      4.20

Pooled StDev = 0.9273
```

One-way ANOVA: Q. How prepared is the bank to invest in, and incubate e learning for several years in order to get it firmly established? versus K-means Clustering groups

```
Source               DF     SS     MS      F      P
K-means Clustering    1  10.67  10.67  10.13  0.004
Error                22  23.17   1.05
Total                23  33.83

S = 1.026   R-Sq = 31.53%   R-Sq(adj) = 28.41%

                            Individual 95% CIs For Mean Based on
                            Pooled StDev
Level     N   Mean  StDev  -------+---------+---------+---------+--
Group 1  12  3.583  0.900                   (--------*--------)
Group 2  12  2.250  1.138  (--------*--------)
                            -------+---------+---------+---------+--
                                 2.10      2.80      3.50      4.20

Pooled StDev = 1.026
```

One-way ANOVA: Q. How prepared is the bank to deal with a large and increasingly complex e-learning marketplace? versus K-means Clustering groups

```
Source               DF     SS    MS     F      P
K-means Clustering    1   8.17  8.17  7.54  0.012
Error                22  23.83  1.08
Total                23  32.00

S = 1.041   R-Sq = 25.52%   R-Sq(adj) = 22.14%

                            Individual 95% CIs For Mean Based on
                            Pooled StDev
Level     N   Mean  StDev  ----+---------+---------+---------+-----
Group 1  12  3.583  0.793                  (--------*--------)
Group 2  12  2.417  1.240  (--------*-------)
                            ----+---------+---------+---------+-----
                              2.10      2.80      3.50      4.20

Pooled StDev = 1.041
```

One-way ANOVA: Q. Does the bank have a good handle on what it is buying in the e-learning marketplace – can it differentiate quality products and weed out redundancies? versus K-means Clustering groups

```
Source              DF     SS     MS     F      P
K-means Clustering   1  10.67  10.67  9.32  0.006
Error               22  25.17   1.14
Total               23  35.83

S = 1.070   R-Sq = 29.77%   R-Sq(adj) = 26.58%


                            Individual 95% CIs For Mean Based on
                            Pooled StDev
Level     N   Mean  StDev  -----+---------+---------+---------+----
Group 1  12  3.750  0.866                    (---------*--------)
Group 2  12  2.417  1.240  (---------*--------)
                            -----+---------+---------+---------+----
                               2.10      2.80      3.50      4.20

Pooled StDev = 1.070
```

One-way ANOVA: Q. Is the bank prepared to outsource some of its functions and manage them externally so that it can concentrate its resources on more valuable areas? versus K-means Clustering groups

```
Source              DF     SS    MS     F      P
K-means Clustering     1   9.38  9.38  7.86  0.010
Error               22  26.25  1.19
Total               23  35.63

S = 1.092   R-Sq = 26.32%   R-Sq(adj) = 22.97%


                            Individual 95% CIs For Mean Based on
                            Pooled StDev
Level     N   Mean  StDev   -+---------+---------+---------+--------
Group 1  12  3.250  0.866                    (--------*---------)
Group 2  12  2.000  1.279   (---------*--------)
                             -+---------+---------+---------+--------
                            1.40      2.10      2.80      3.50

Pooled StDev = 1.092
```

One-way ANOVA: Q. How committed are you, personally, to e-learning? Are you ready? versus K-means Clustering groups

```
Source              DF     SS    MS     F      P
K-means Clustering   1   2.67  2.67  2.01  0.170
Error               22  29.17  1.33
Total               23  31.83

S = 1.151   R-Sq = 8.38%   R-Sq(adj) = 4.21%


                            Individual 95% CIs For Mean Based on
                            Pooled StDev
Level     N   Mean  StDev  -------+---------+---------+---------+--
Group 1  12  3.917  0.996            (----------*----------)
```

```
Group 2  12  3.250  1.288  (----------*----------)
                           -------+---------+---------+---------+--
                                3.00      3.60      4.20      4.80

Pooled StDev = 1.151
```

Appendix B – 10: Binary Logistic Regression on Bank Categories (UEL vs. NEL)

```
Link Function: Logit


Response Information

Variable                    Value  Count
Currently Using e-learning  2          5  (Event)
                            1         20
                            Total     25


Logistic Regression Table

                                                          Odds      95% CI
Predictor           Coef  SE Coef      Z      P  Ratio  Lower   Upper
Constant        -3.86547  4.80525  -0.80  0.421
Innovators      0.182773  1.78924   0.10  0.919   1.20   0.04   40.03
Early Adopters  0.808249  2.24627   0.36  0.719   2.24   0.03  183.27
Early Majority   1.07622  1.98059   0.54  0.587   2.93   0.06  142.34
Late Majority   0.604397  1.64053   0.37  0.713   1.83   0.07   45.60
Laggards        -1.82334  1.53591  -1.19  0.235   0.16   0.01    3.28


Log-Likelihood = -10.745
Test that all slopes are zero: G = 3.530, DF = 5, P-Value = 0.619


Goodness-of-Fit Tests

Method           Chi-Square  DF      P
Pearson             28.8650  17  0.036
Deviance            21.4902  17  0.205
Hosmer-Lemeshow      8.9749   8  0.344


Table of Observed and Expected Frequencies:
(See Hosmer-Lemeshow Test for the Pearson Chi-Square Statistic)

                          Group
Value    1    2    3    4    5    6    7    8    9   10  Total
2
  Obs    0    1    0    0    0    0    0    2    1    1      5
  Exp  0.0  0.2  0.1  0.4  0.2  0.4  0.5  1.0  0.8  1.3
1
  Obs    2    2    2    4    2    2    2    1    1    2     20
  Exp  2.0  2.8  1.9  3.6  1.8  1.6  1.5  2.0  1.2  1.7
Total    2    3    2    4    2    2    2    3    2    3     25


Measures of Association:
(Between the Response Variable and Predicted Probabilities)

Pairs       Number  Percent  Summary Measures
```

Concordant	75	75.0	Somers' D	0.50
Discordant	25	25.0	Goodman-Kruskal Gamma	0.50
Ties	0	0.0	Kendall's Tau-a	0.17
Total	100	100.0		

Appendix B – 11: Kruskal-Wallis Test

Kruskal-Wallis Test on Total Number of Employees (2004

K-means Clustering groups	N	Median	Ave Rank	Z
Group 1	12	415.5	14.3	1.27
Group 2	12	300.5	10.7	-1.27
Overall	24		12.5	

H = 1.61 DF = 1 P = 0.204
H = 1.61 DF = 1 P = 0.204 (adjusted for ties)

Kruskal-Wallis Test on Net Profit Before Tax (2005)

K-means Clustering groups	N	Median	Ave Rank	Z
Group 1	12	742760	14.6	1.44
Group 2	12	180521	10.4	-1.44
Overall	24		12.5	

H = 2.08 DF = 1 P = 0.149
H = 2.08 DF = 1 P = 0.149 (adjusted for ties)

Kruskal-Wallis Test on Net Profit Before Tax (2005)

Currently Using e-learning	N	Median	Ave Rank	Z
1	20	180521	11.9	-1.56
2	5	882713	17.6	1.56
Overall	25		13.0	

H = 2.44 DF = 1 P = 0.118
H = 2.44 DF = 1 P = 0.118 (adjusted for ties)

Kruskal-Wallis Test on Total Number of Employees (2004

Currently Using e-learning	N	Median	Ave Rank	Z
1	20	300.5	11.5	-2.11
2	5	1036.0	19.2	2.11
Overall	25		13.0	

H = 4.44 DF = 1 P = 0.035
H = 4.44 DF = 1 P = 0.035 (adjusted for ties)

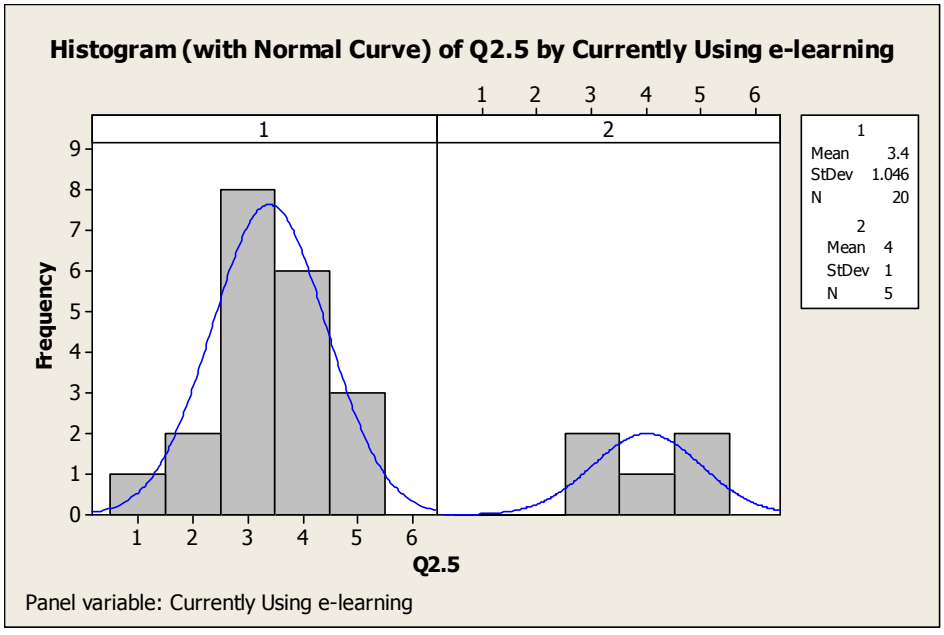
Appendix B – 12: Descriptive Statistics and Histograms on each question of the survey

Q. Bank's management is passionate with trying new IT Technologies.

Descriptive Statistics:

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q2.5	1	20	20	0	3.400	0.234	1.046	1.095	1.000
	2	5	5	0	4.000	0.447	1.000	1.000	3.000

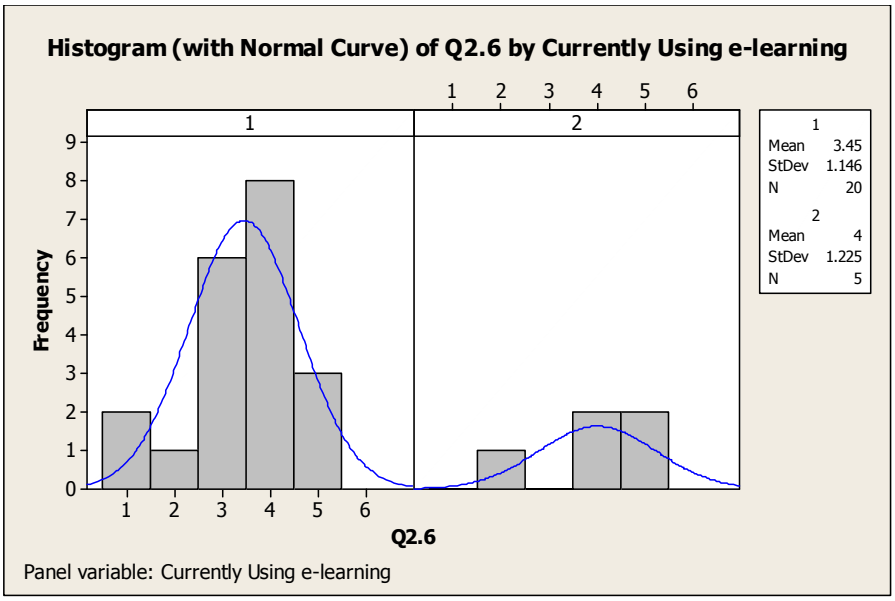
Variable	Currently Using e-learning	Median	Maximum
Q2.5	1	3.000	5.000
	2	4.000	5.000



Q. Bank's management is innovative and eager to be the first to adopt new IT technologies.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q2.6	1	20	20	0	3.450	0.256	1.146	1.313	1.000
	2	5	5	0	4.000	0.548	1.225	1.500	2.000

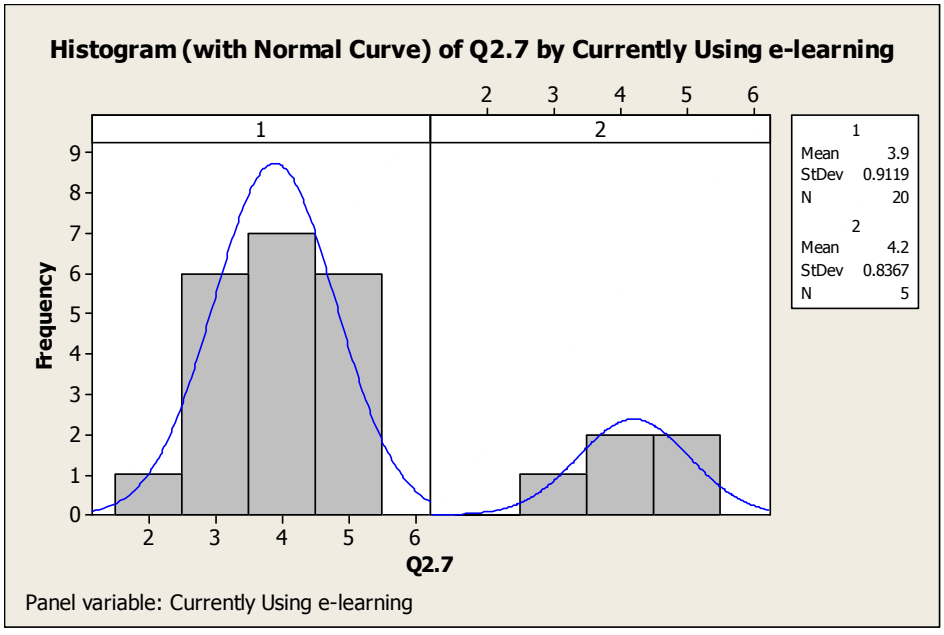
Variable	Currently Using e-learning	Median	Maximum
Q2.6	1	4.000	5.000
	2	4.000	5.000



Q. Bank's management actively seeks out new IT innovations.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q2.7	1	20	20	0	3.900	0.204	0.912	0.832	2.000
	2	5	5	0	4.200	0.374	0.837	0.700	3.000

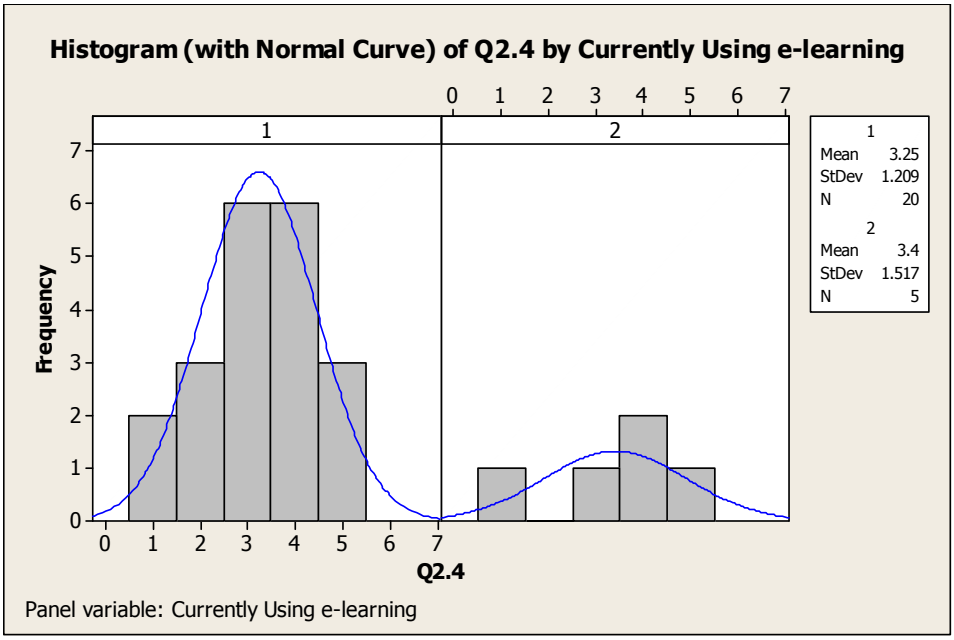
Variable	Currently Using e-learning	Median	Maximum
Q2.7	1	4.000	5.000
	2	4.000	5.000



Q. Bank's management often uses other banks' experience of innovative uses of IT technology to gain more information and to make decisions.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q2.4	1	20	20	0	3.250	0.270	1.209	1.461	1.000
	2	5	5	0	3.400	0.678	1.517	2.300	1.000

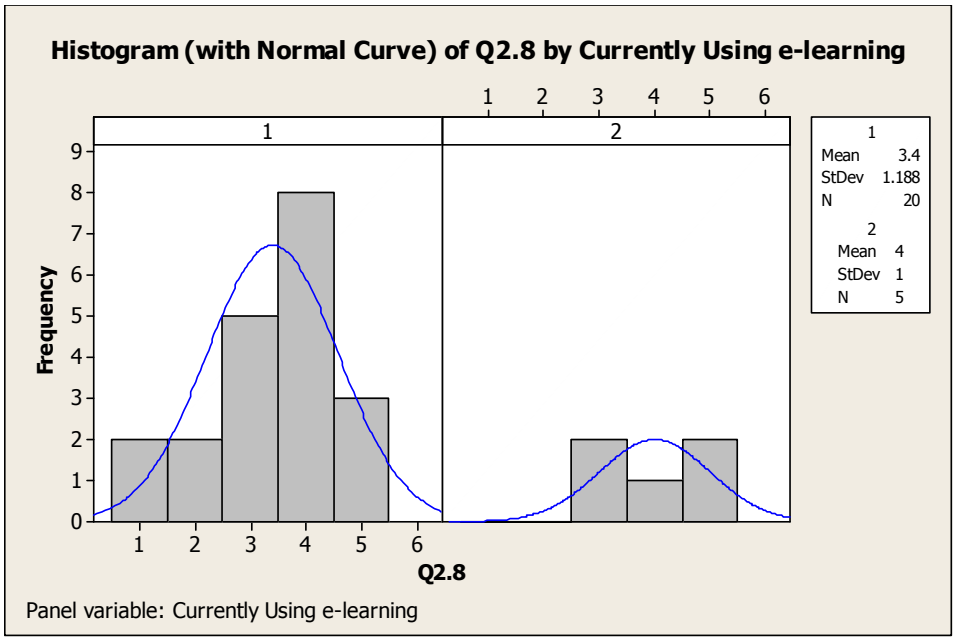
Variable	Currently Using e-learning	Median	Maximum
Q2.4	1	3.000	5.000
	2	4.000	5.000



Q. Bank's management often adopts new IT innovations and influences other banks to do so as well.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q2.8	1	20	20	0	3.400	0.266	1.188	1.411	1.000
	2	5	5	0	4.000	0.447	1.000	1.000	3.000

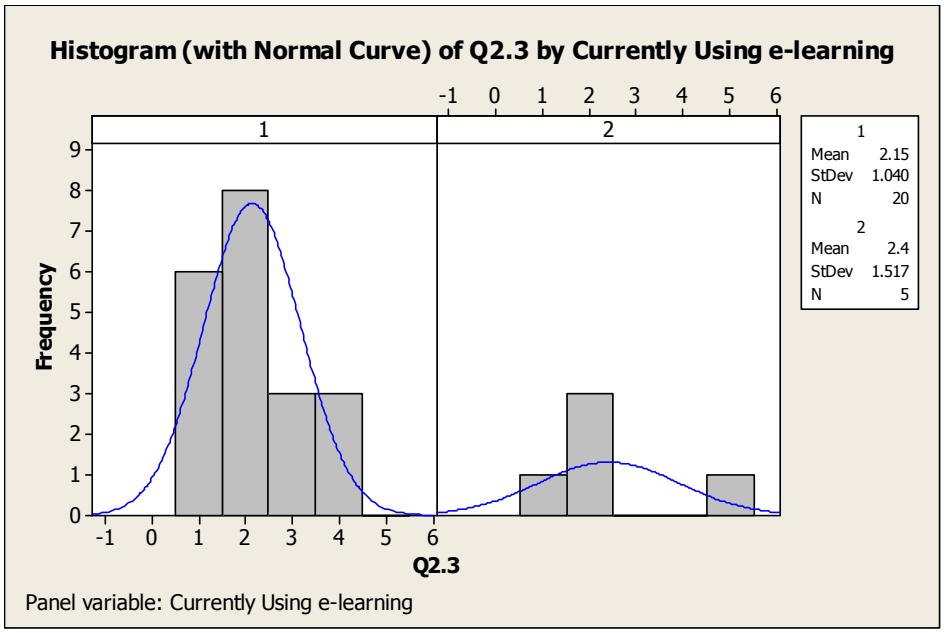
Variable	Currently Using e-learning	Median	Maximum
Q2.8	1	4.000	5.000
	2	4.000	5.000



Q. Bank's management is willing to adopt new IT technology but is not willing to be a leader in the change process among other banks.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q2.3	1	20	20	0	2.150	0.233	1.040	1.082	1.000
	2	5	5	0	2.400	0.678	1.517	2.300	1.000

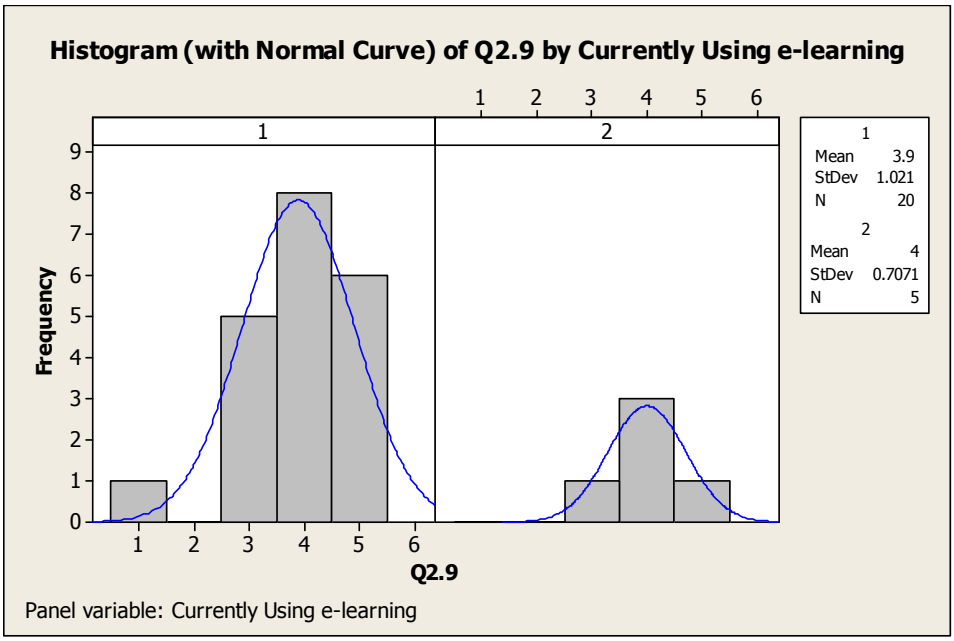
Variable	Currently Using e-learning	Median	Maximum
Q2.3	1	2.000	4.000
	2	2.000	5.000



Q. Bank's management is willing to follow the lead of other banks in adopting new IT innovations.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q2.9	1	20	20	0	3.900	0.228	1.021	1.042	1.000
	2	5	5	0	4.000	0.316	0.707	0.500	3.000

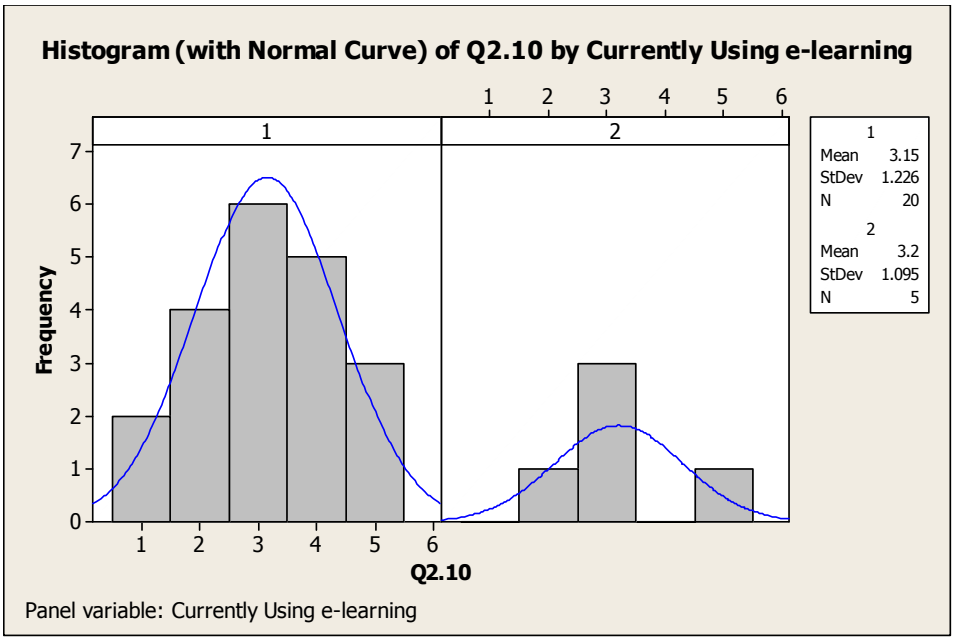
Variable	Currently Using e-learning	Median	Maximum
Q2.9	1	4.000	5.000
	2	4.000	5.000



Q. Bank's management is generally willing to adopt new IT technology but does not attempt to influence other banks to do so.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q2.10	1	20	20	0	3.150	0.274	1.226	1.503	1.000
	2	5	5	0	3.200	0.490	1.095	1.200	2.000

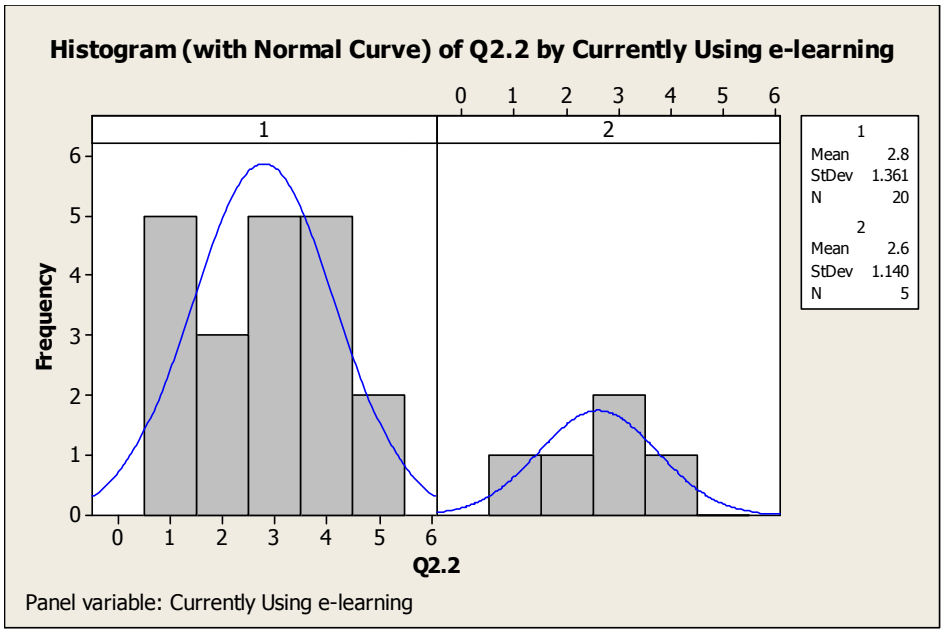
Variable	Currently Using e-learning	Median	Maximum
Q2.10	1	3.000	5.000
	2	3.000	5.000



Q. Bank's management is generally cautious about introducing new IT technology in the bank.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q2.2	1	20	20	0	2.800	0.304	1.361	1.853	1.000
	2	5	5	0	2.600	0.510	1.140	1.300	1.000

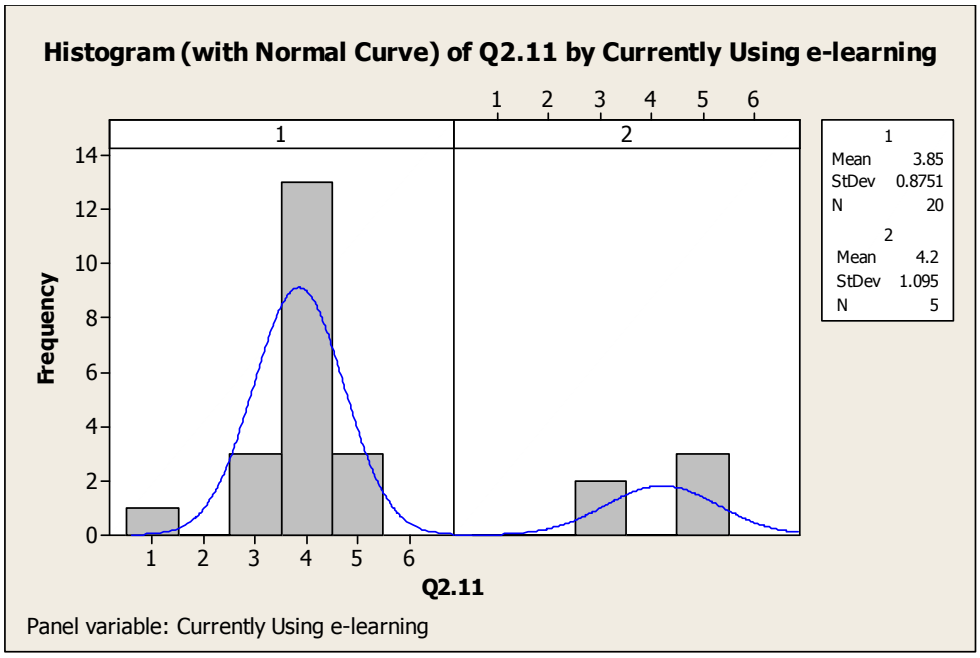
Variable	Currently Using e-learning	Median	Maximum
Q2.2	1	3.000	5.000
	2	3.000	4.000



Q. Bank's management is generally convinced of the advantage of using IT technology based on successful use by other banks.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q2.11	1	20	20	0	3.850	0.196	0.875	0.766	1.000
	2	5	5	0	4.200	0.490	1.095	1.200	3.000

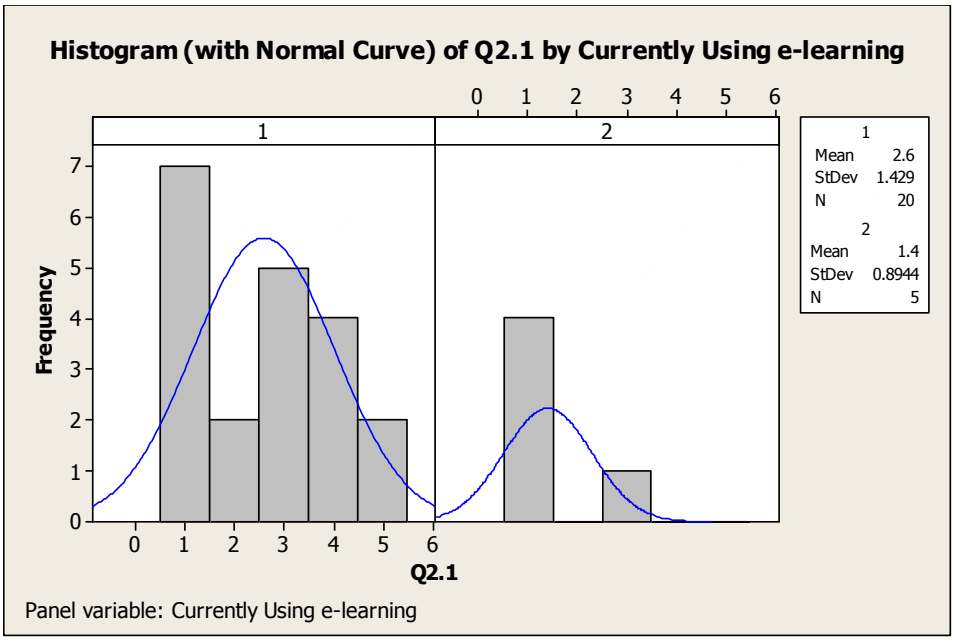
Variable	Currently Using e-learning	Median	Maximum
Q2.11	1	4.000	5.000
	2	5.000	5.000



Q. Bank's management typically show resistance towards adoption of new IT technology or training program until they are sure that it will be successful.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q2.1	1	20	20	0	2.600	0.320	1.429	2.042	1.000
	2	5	5	0	1.400	0.400	0.894	0.800	1.000

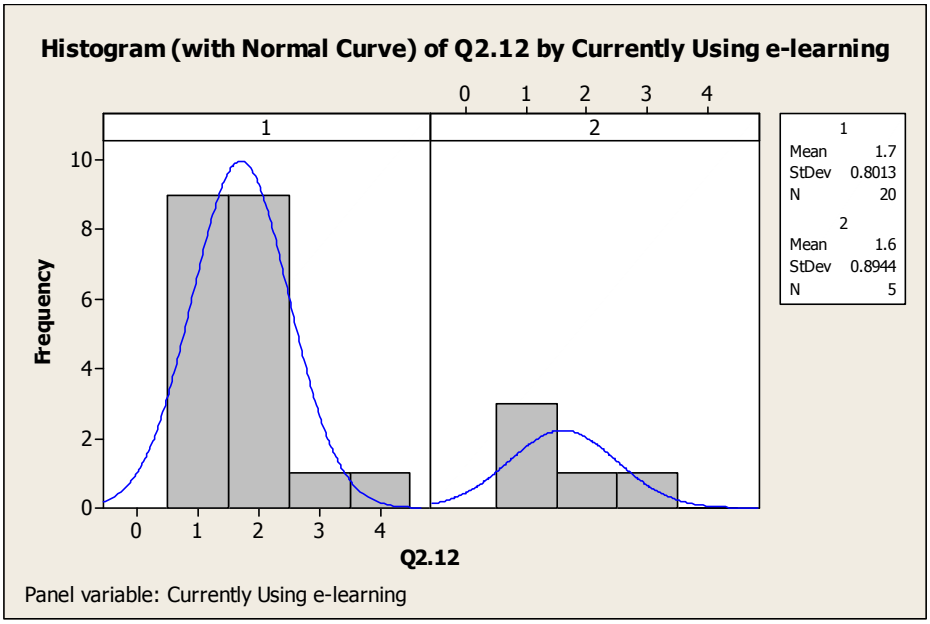
Variable	Currently Using e-learning	Median	Maximum
Q2.1	1	3.000	5.000
	2	1.000	3.000



Q. The management in the bank is suspicious of using new IT technologies.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q2.12	1	20	20	0	1.700	0.179	0.801	0.642	1.000
	2	5	5	0	1.600	0.400	0.894	0.800	1.000

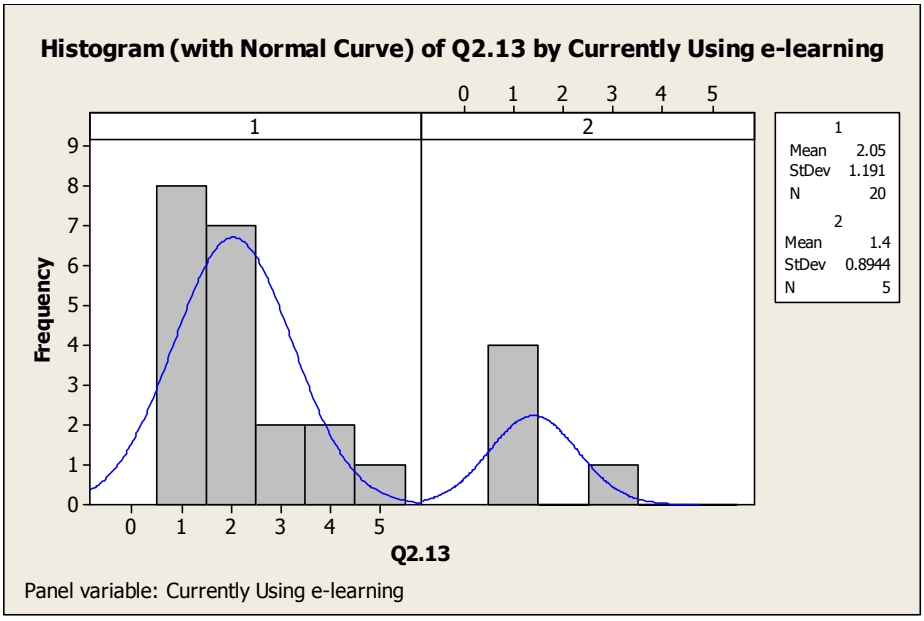
Variable	Currently Using e-learning	Median	Maximum
Q2.12	1	2.000	4.000
	2	1.000	3.000



Q. Bank's management is generally resistant to change.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q2.13	1	20	20	0	2.050	0.266	1.191	1.418	1.000
	2	5	5	0	1.400	0.400	0.894	0.800	1.000

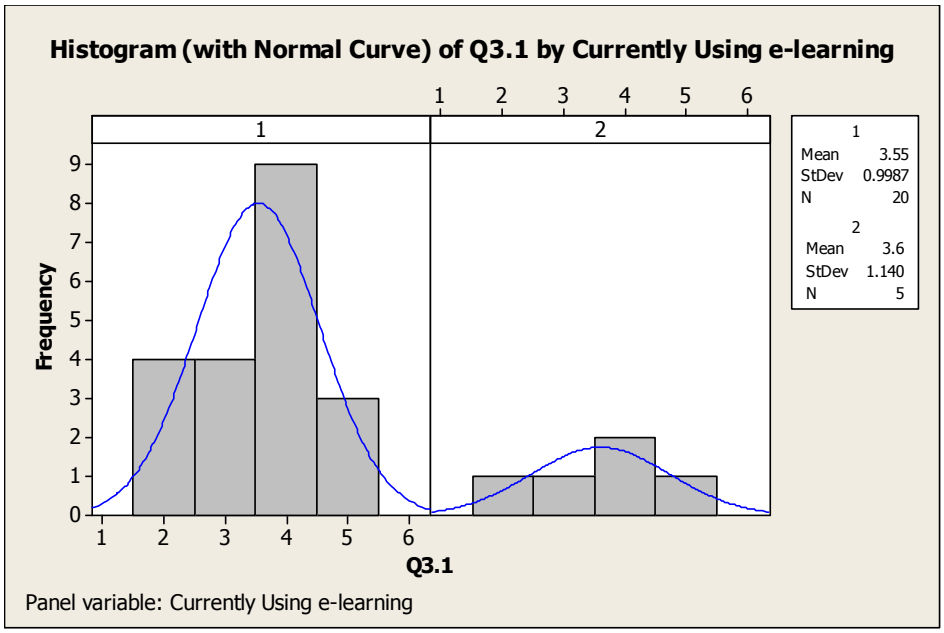
Variable	Currently Using e-learning	Median	Maximum
Q2.13	1	2.000	5.000
	2	1.000	3.000



Q. E-learning is more effective when compared to other forms of education/training in addressing the regulatory compliance issues of anti-money laundering.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q3.1	1	20	20	0	3.550	0.223	0.999	0.997	2.000
	2	5	5	0	3.600	0.510	1.140	1.300	2.000

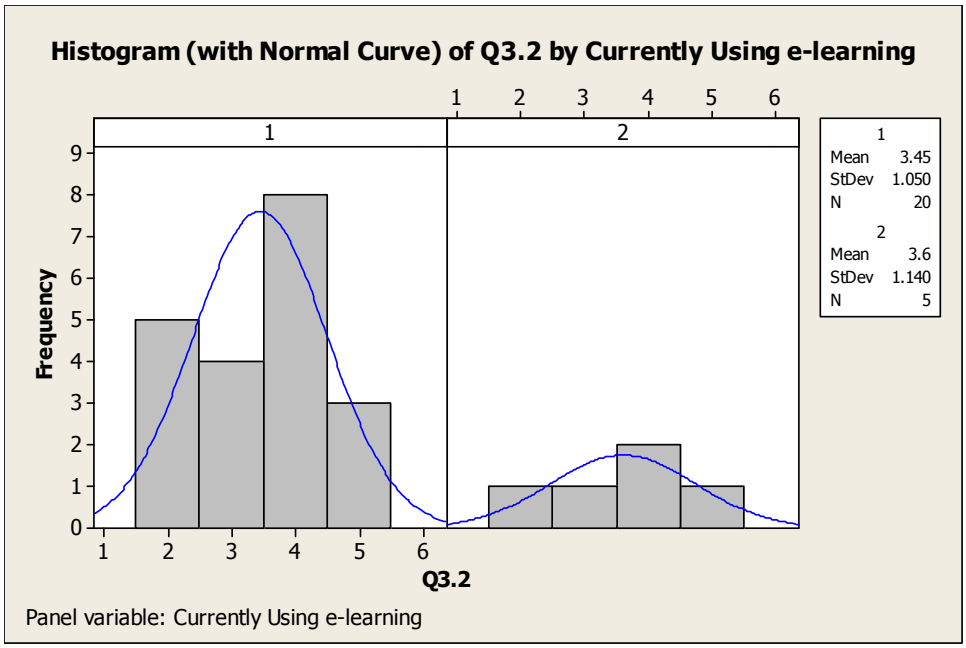
Variable	Currently Using e-learning	Median	Maximum
Q3.1	1	4.000	5.000
	2	4.000	5.000



Q. E-learning for anti-money laundering training improves the quality of training when compared with traditional training methods.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q3.2	1	20	20	0	3.450	0.235	1.050	1.103	2.000
	2	5	5	0	3.600	0.510	1.140	1.300	2.000

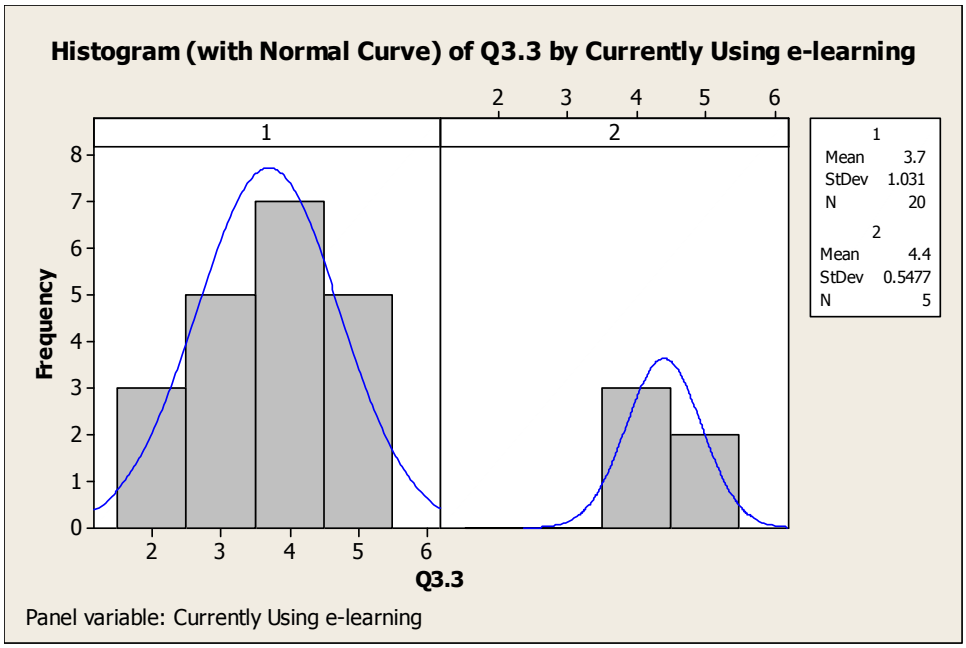
Variable	Currently Using e-learning	Median	Maximum
Q3.2	1	4.000	5.000
	2	4.000	5.000



Q. E-learning for anti-money laundering training is more convenient than the traditional training methods because of 24x7 availability.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q3.3	1	20	20	0	3.700	0.231	1.031	1.063	2.000
	2	5	5	0	4.400	0.245	0.548	0.300	4.000

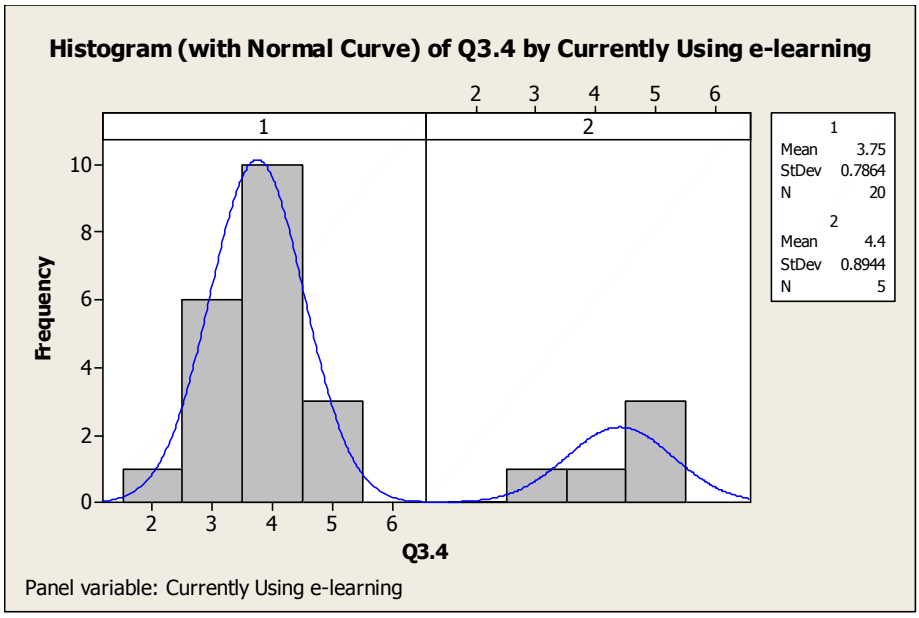
Variable	Currently Using e-learning	Median	Maximum
Q3.3	1	4.000	5.000
	2	4.000	5.000



Q. E-learning for anti-money laundering training is cheaper than traditional training/education.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q3.4	1	20	20	0	3.750	0.176	0.786	0.618	2.000
	2	5	5	0	4.400	0.400	0.894	0.800	3.000

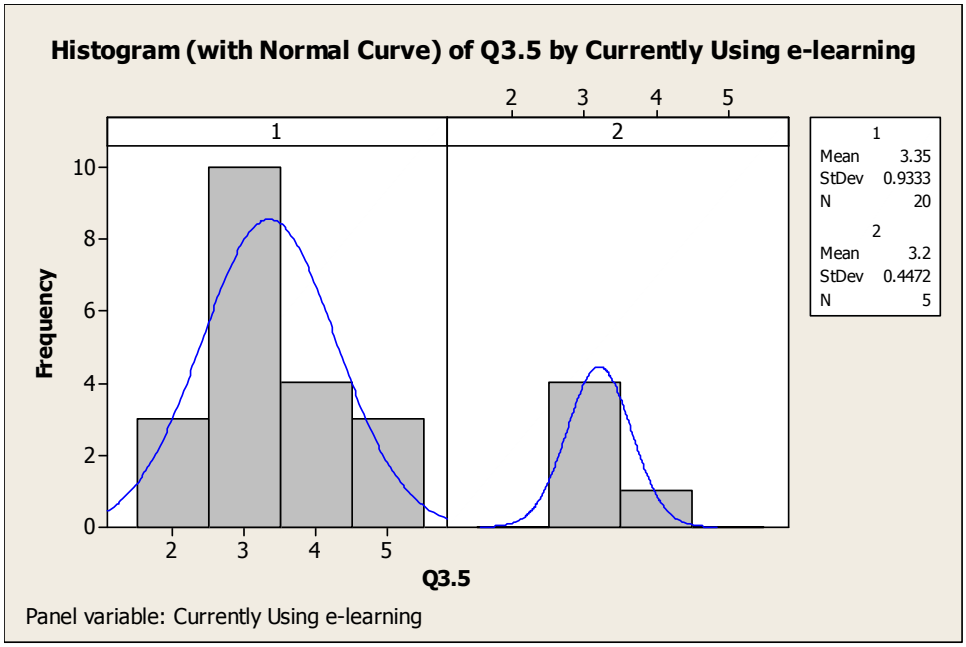
Variable	Currently Using e-learning	Median	Maximum
Q3.4	1	4.000	5.000
	2	5.000	5.000



Q. E-learning for anti-money laundering is better received by Bank's employees than the traditional training/education.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q3.5	1	20	20	0	3.350	0.209	0.933	0.871	2.000
	2	5	5	0	3.200	0.200	0.447	0.200	3.000

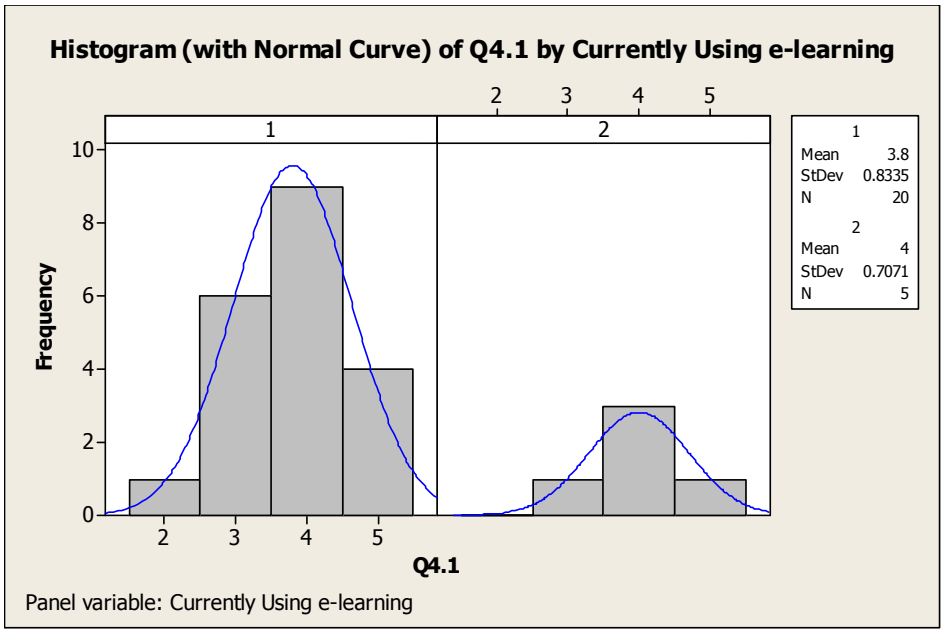
Variable	Currently Using e-learning	Median	Maximum
Q3.5	1	3.000	5.000
	2	3.000	4.000



Q. Using e-learning for anti money laundering training is consistent with the bank's existing values.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q4.1	1	20	20	0	3.800	0.186	0.834	0.695	2.000
	2	5	5	0	4.000	0.316	0.707	0.500	3.000

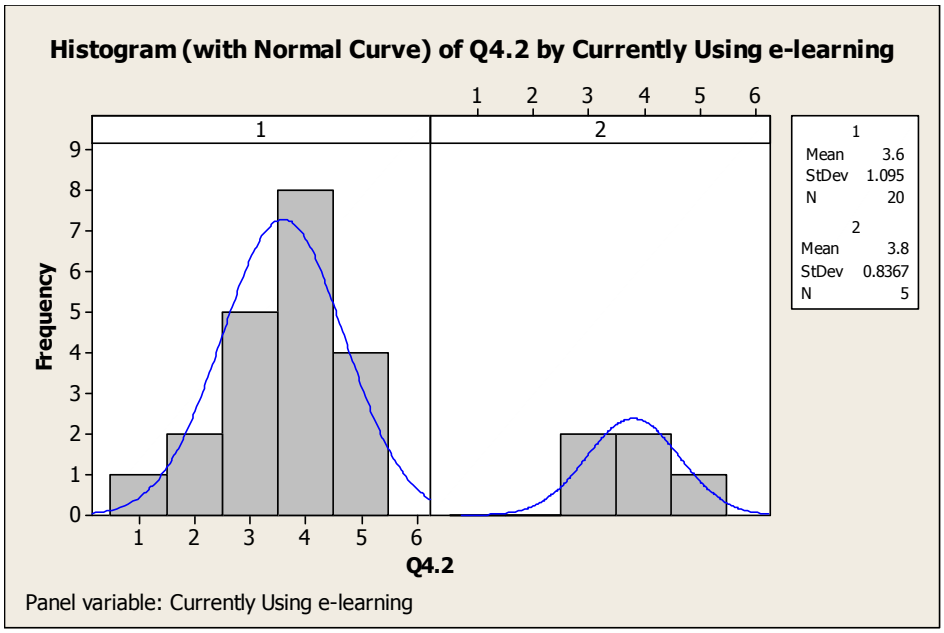
Variable	Currently Using e-learning	Median	Maximum
Q4.1	1	4.000	5.000
	2	4.000	5.000



Q. Using e-learning for anti-money laundering training satisfies bank's current training needs.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q4.2	1	20	20	0	3.600	0.245	1.095	1.200	1.000
	2	5	5	0	3.800	0.374	0.837	0.700	3.000

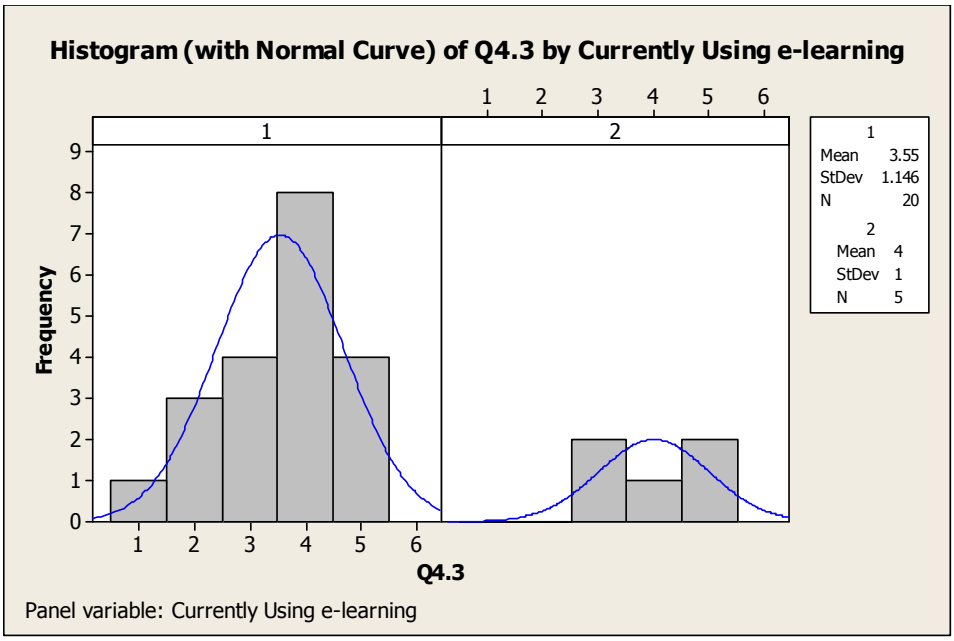
Variable	Currently Using e-learning	Median	Maximum
Q4.2	1	4.000	5.000
	2	4.000	5.000



Q. Using e-learning for anti-money laundering training is consistent with bank's past experiences with use of Information Technology.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q4.3	1	20	20	0	3.550	0.256	1.146	1.313	1.000
	2	5	5	0	4.000	0.447	1.000	1.000	3.000

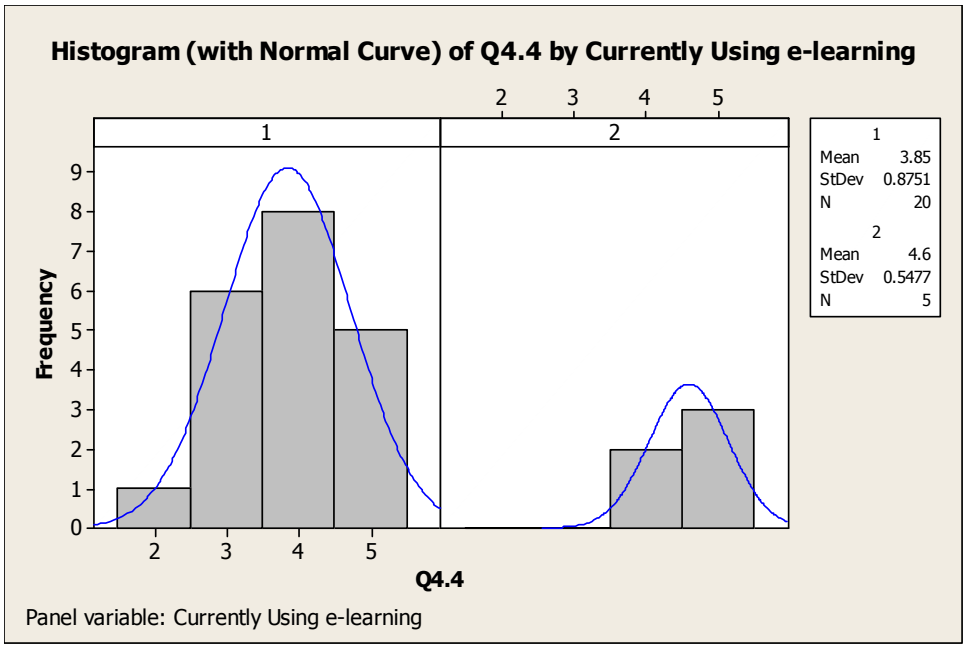
Variable	Currently Using e-learning	Median	Maximum
Q4.3	1	4.000	5.000
	2	4.000	5.000



Q. Using e-learning for anti-money laundering training will fill specific needs of employees who need training on anti-money laundering compliance.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q4.4	1	20	20	0	3.850	0.196	0.875	0.766	2.000
	2	5	5	0	4.600	0.245	0.548	0.300	4.000

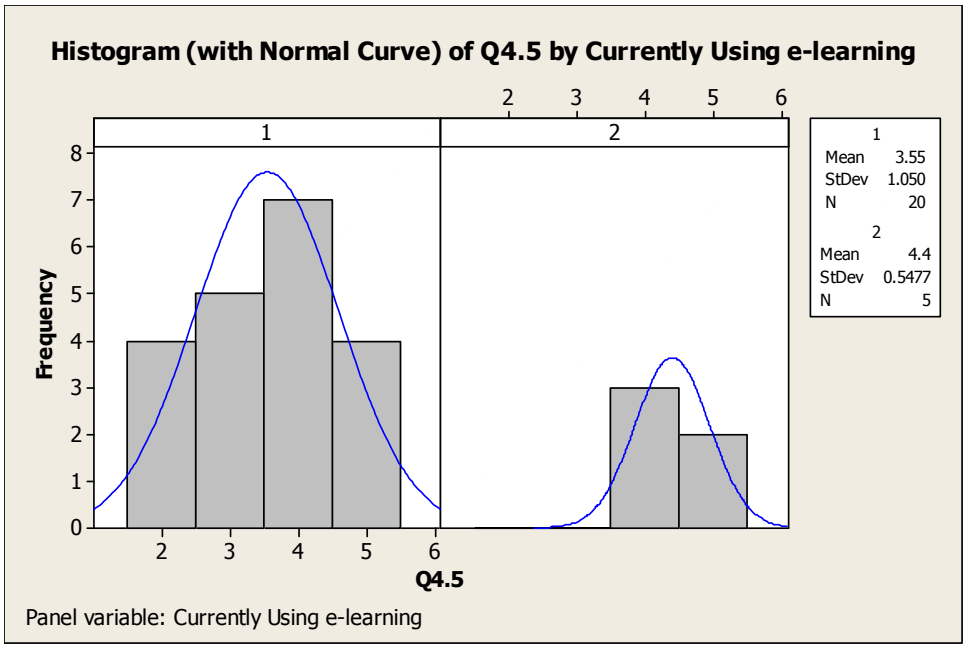
Variable	Currently Using e-learning	Median	Maximum
Q4.4	1	4.000	5.000
	2	5.000	5.000



Q. Using e-learning for anti-money laundering training fits well with the existing work practices of bank's employees.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q4.5	1	20	20	0	3.550	0.235	1.050	1.103	2.000
	2	5	5	0	4.400	0.245	0.548	0.300	4.000

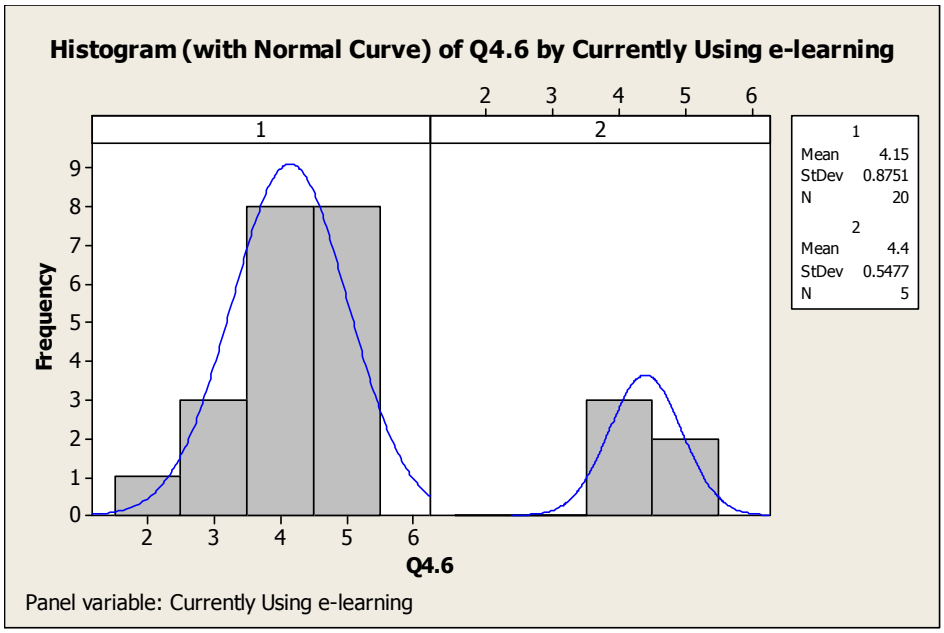
Variable	Currently Using e-learning	Median	Maximum
Q4.5	1	4.000	5.000
	2	4.000	5.000



Q. Using blended learning involved both traditional and e-learning for anti-money laundering training will be preferred by bank's employees over use of traditional training methods alone.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q4.6	1	20	20	0	4.150	0.196	0.875	0.766	2.000
	2	5	5	0	4.400	0.245	0.548	0.300	4.000

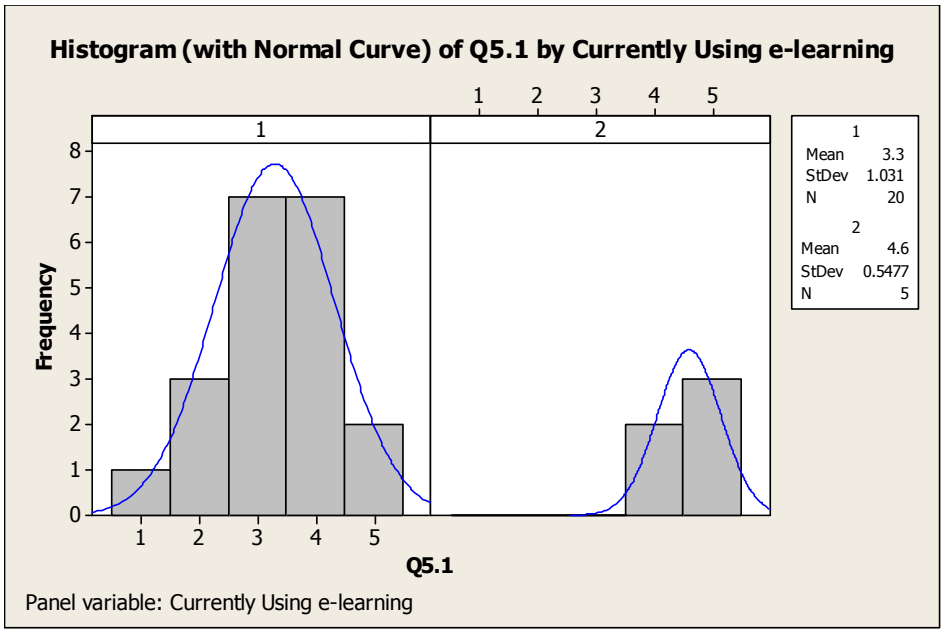
Variable	Currently Using e-learning	Median	Maximum
Q4.6	1	4.000	5.000
	2	4.000	5.000



Q. Implementing e-learning to accomplish anti-money laundering compliance training is easy.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q5.1	1	20	20	0	3.300	0.231	1.031	1.063	1.000
	2	5	5	0	4.600	0.245	0.548	0.300	4.000

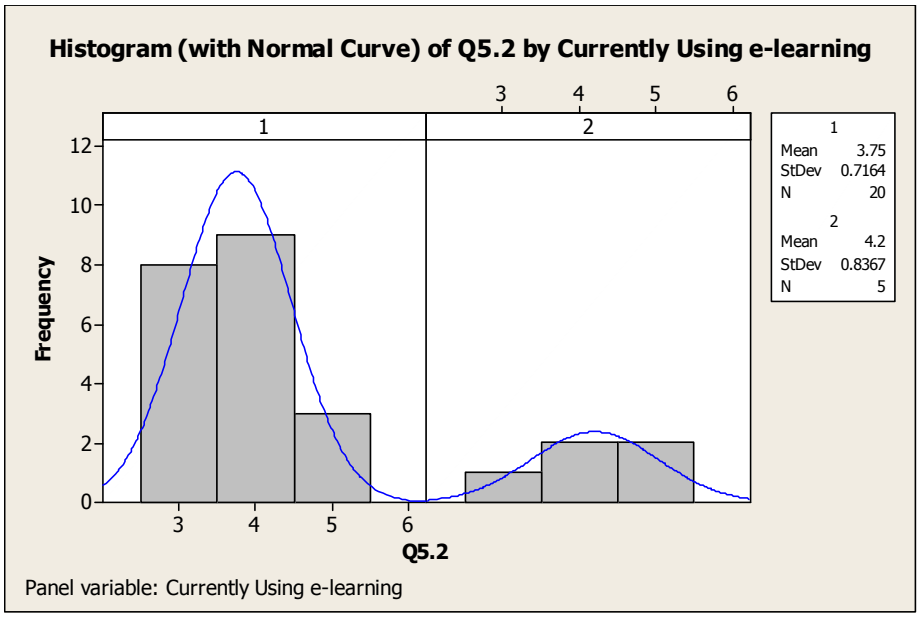
Variable	Currently Using e-learning	Median	Maximum
Q5.1	1	3.000	5.000
	2	5.000	5.000



Q. Using e-learning makes it easier for the bank to fulfill the anti-money laundering training compliance.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q5.2	1	20	20	0	3.750	0.160	0.716	0.513	3.000
	2	5	5	0	4.200	0.374	0.837	0.700	3.000

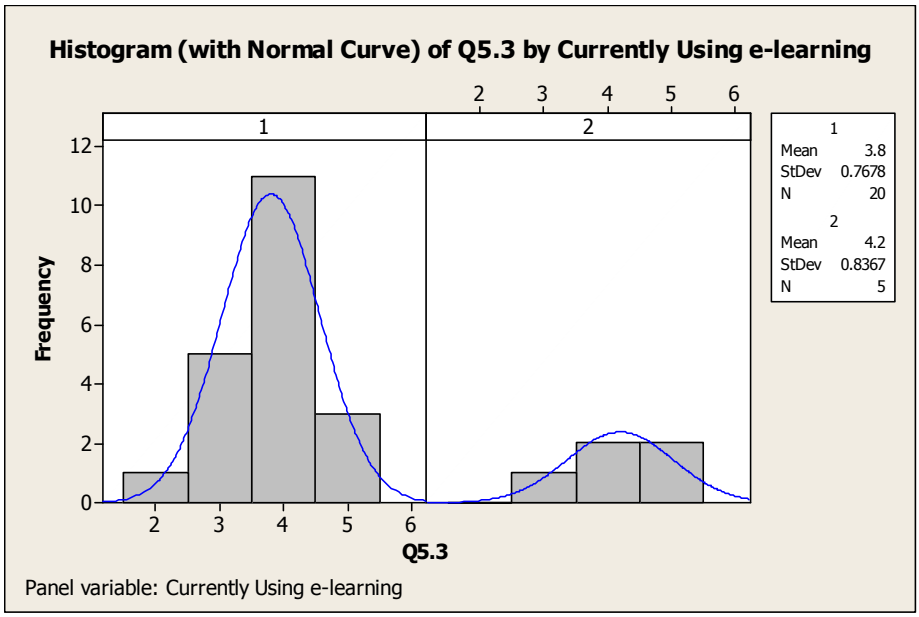
Variable	Currently Using e-learning	Median	Maximum
Q5.2	1	4.000	5.000
	2	4.000	5.000



Q. It fairly clear how e-learning can be used to conduct anti-money laundering training.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q5.3	1	20	20	0	3.800	0.172	0.768	0.589	2.000
	2	5	5	0	4.200	0.374	0.837	0.700	3.000

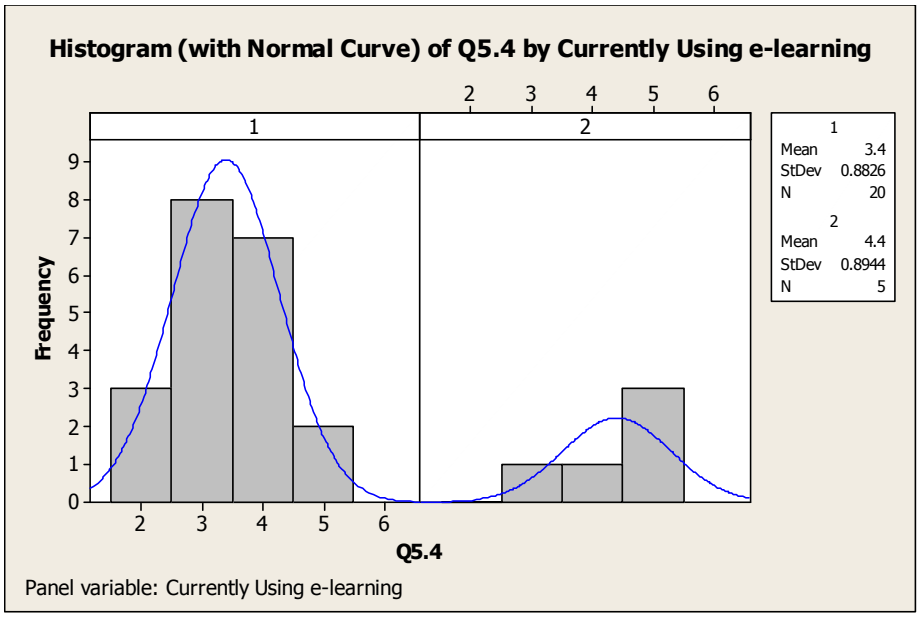
Variable	Currently Using e-learning	Median	Maximum
Q5.3	1	4.000	5.000
	2	4.000	5.000



Q. It is easy for bank employees to learn how to use e-learning for anti money laundering training and compliance.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q5.4	1	20	20	0	3.400	0.197	0.883	0.779	2.000
	2	5	5	0	4.400	0.400	0.894	0.800	3.000

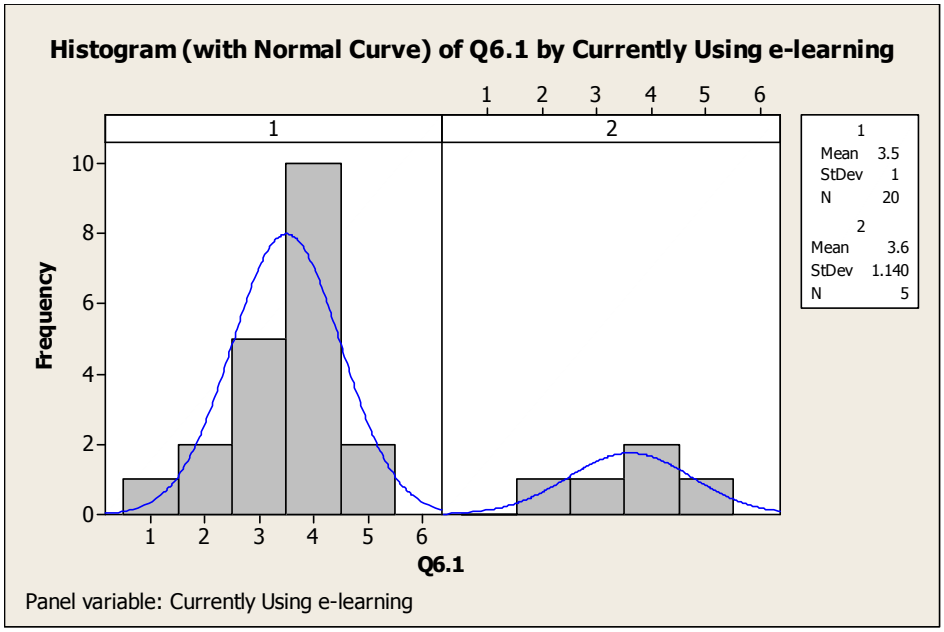
Variable	Currently Using e-learning	Median	Maximum
Q5.4	1	3.000	5.000
	2	5.000	5.000



Q. It is easy for the bank to try various e-learning applications for anti-money laundering training before making a commitment to buying or implementing.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q6.1	1	20	20	0	3.500	0.224	1.000	1.000	1.000
	2	5	5	0	3.600	0.510	1.140	1.300	2.000

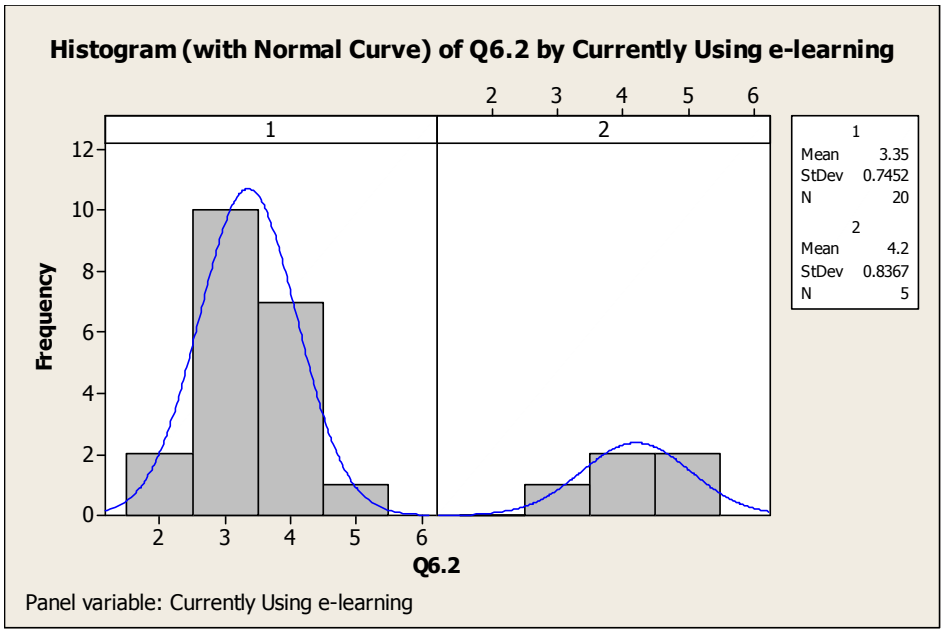
Variable	Currently Using e-learning	Median	Maximum
Q6.1	1	4.000	5.000
	2	4.000	5.000



Q. The bank employees find it easy to use e-learning for anti-money laundering training.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q6.2	1	20	20	0	3.350	0.167	0.745	0.555	2.000
	2	5	5	0	4.200	0.374	0.837	0.700	3.000

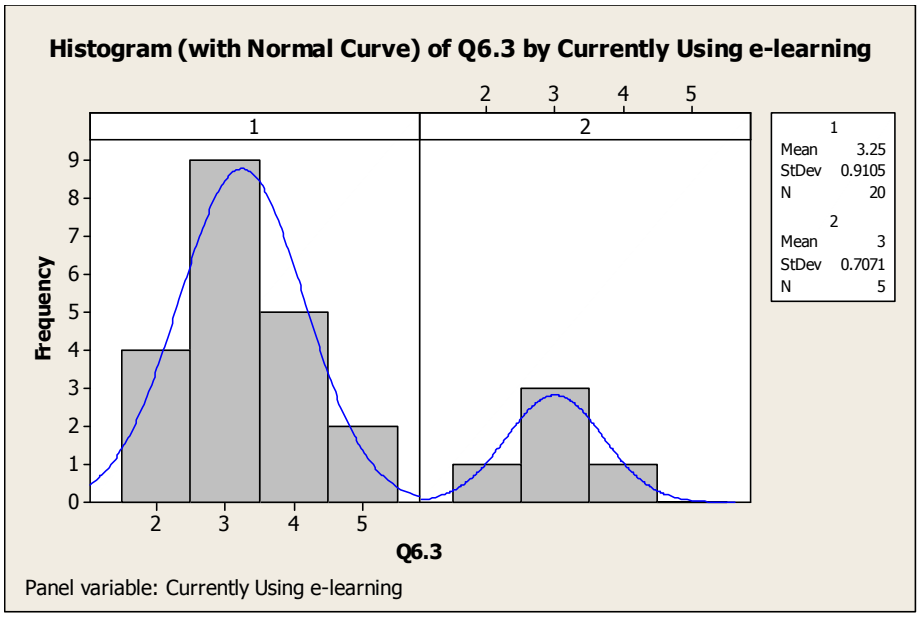
Variable	Currently Using e-learning	Median	Maximum
Q6.2	1	3.000	5.000
	2	4.000	5.000



Q6.3) Rolling out a training program based on e-learning takes very little time.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q6.3	1	20	20	0	3.250	0.204	0.910	0.829	2.000
	2	5	5	0	3.000	0.316	0.707	0.500	2.000

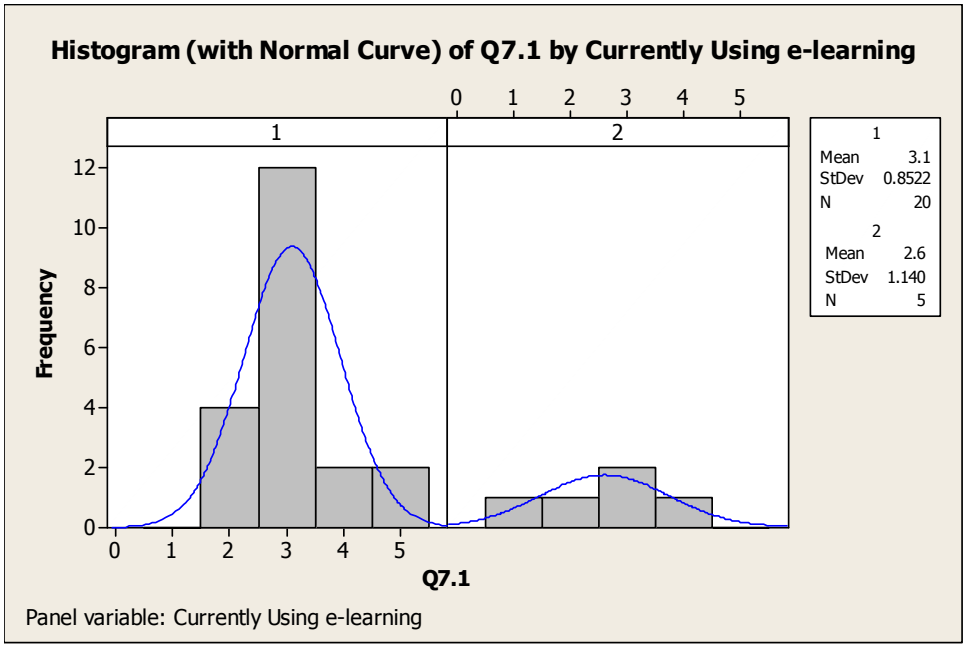
Variable	Currently Using e-learning	Median	Maximum
Q6.3	1	3.000	5.000
	2	3.000	4.000



Q. Bank's management has learned new ways of using e-learning for anti-money laundering training from competitive banks.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q7.1	1	20	20	0	3.100	0.191	0.852	0.726	2.000
	2	5	5	0	2.600	0.510	1.140	1.300	1.000

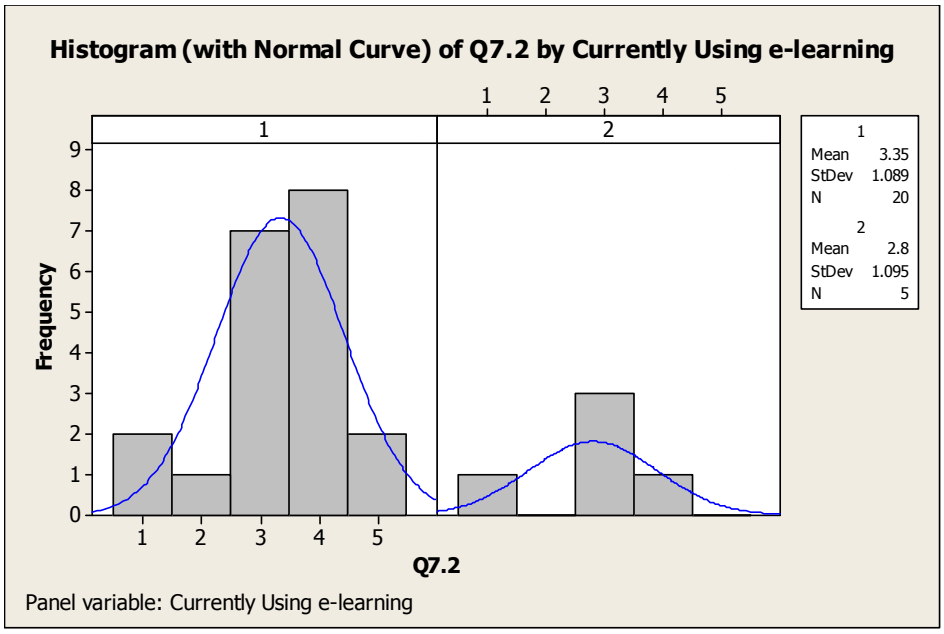
Variable	Currently Using e-learning	Median	Maximum
Q7.1	1	3.000	5.000
	2	3.000	4.000



Q. Bank's management believes that using e-learning for anti-money laundering training may increase its social prestige.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q7.2	1	20	20	0	3.350	0.244	1.089	1.187	1.000
	2	5	5	0	2.800	0.490	1.095	1.200	1.000

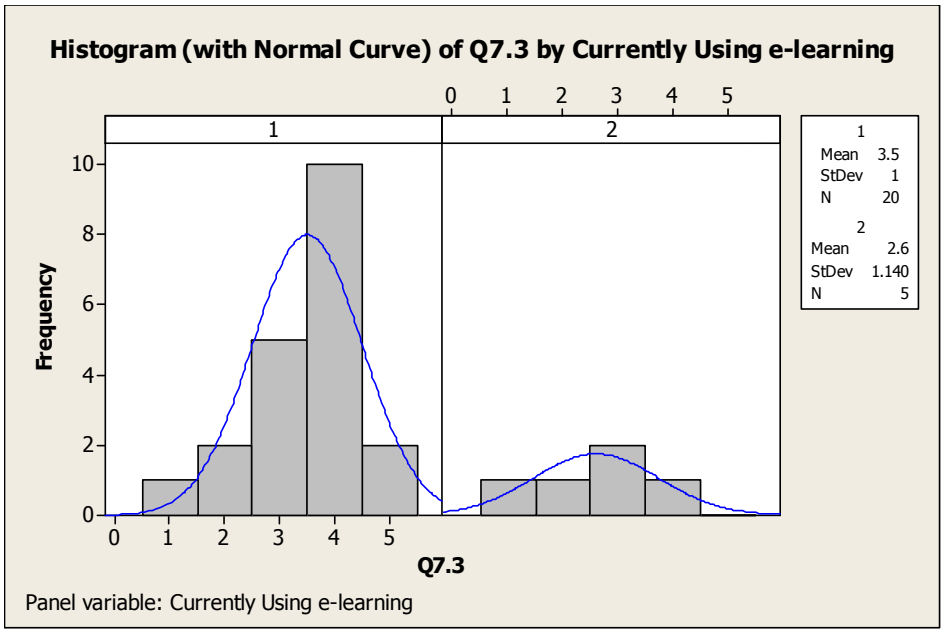
Variable	Currently Using e-learning	Median	Maximum
Q7.2	1	3.500	5.000
	2	3.000	4.000



Q. Employing e-learning for anti-money laundering training will improve an employee's or a manager's image within the bank.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q7.3	1	20	20	0	3.500	0.224	1.000	1.000	1.000
	2	5	5	0	2.600	0.510	1.140	1.300	1.000

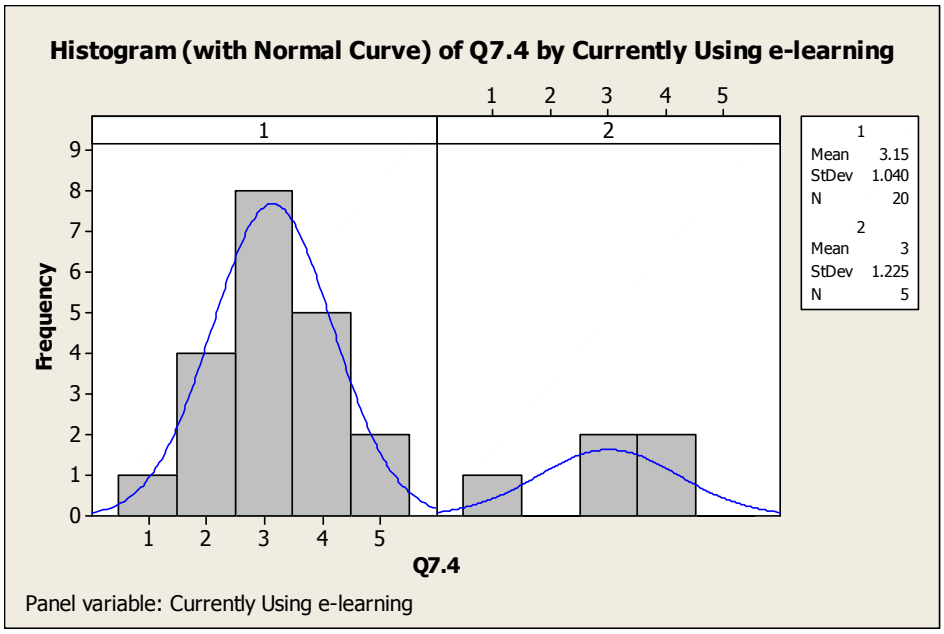
Variable	Currently Using e-learning	Median	Maximum
Q7.3	1	4.000	5.000
	2	3.000	4.000



Q. People who use e-learning for anti-money laundering training have a high profile in the bank.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q7.4	1	20	20	0	3.150	0.233	1.040	1.082	1.000
	2	5	5	0	3.000	0.548	1.225	1.500	1.000

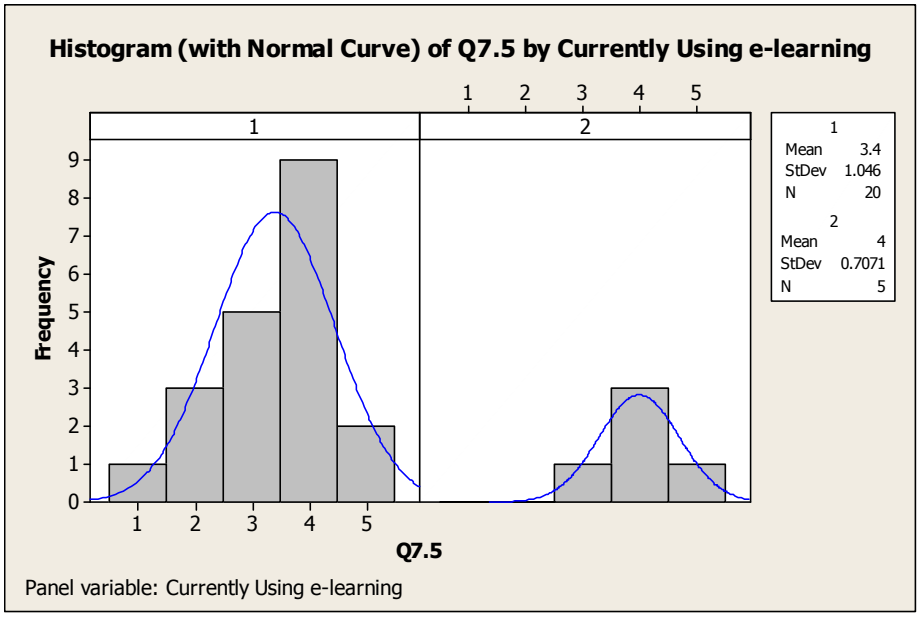
Variable	Currently Using e-learning	Median	Maximum
Q7.4	1	3.000	5.000
	2	3.000	4.000



Q. The use of e-learning for anti-money laundering is visible to everyone in the bank.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q7.5	1	20	20	0	3.400	0.234	1.046	1.095	1.000
	2	5	5	0	4.000	0.316	0.707	0.500	3.000

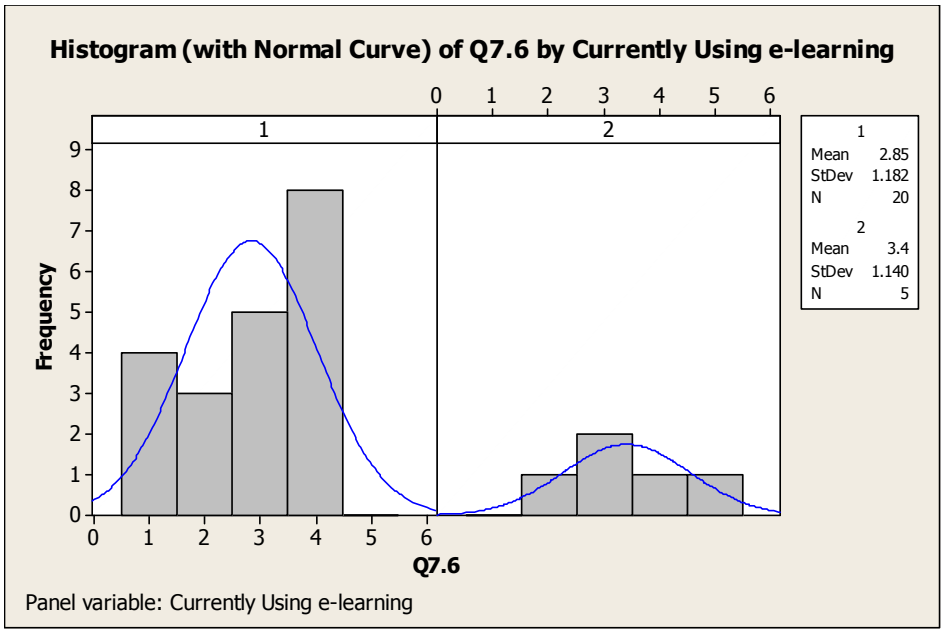
Variable	Currently Using e-learning	Median	Maximum
Q7.5	1	4.000	5.000
	2	4.000	5.000



Q. The use of e-learning for anti-money laundering is visible to others outside the bank.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q7.6	1	20	20	0	2.850	0.264	1.182	1.397	1.000
	2	5	5	0	3.400	0.510	1.140	1.300	2.000

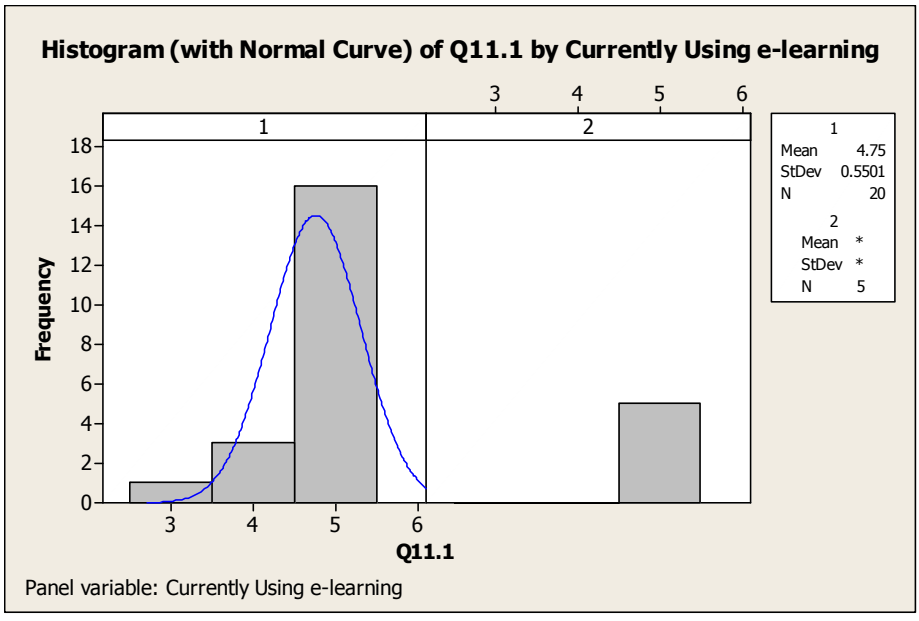
Variable	Currently Using e-learning	Median	Maximum
Q7.6	1	3.000	4.000
	2	3.000	5.000



Q. Our bank requires us to report any suspicious client activities to the regulatory authority immediately?

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev
Q11.1	1	20	20	0	4.750	0.123	0.550
	2	5	5	0	5.0000	0.000000000	0.000000000

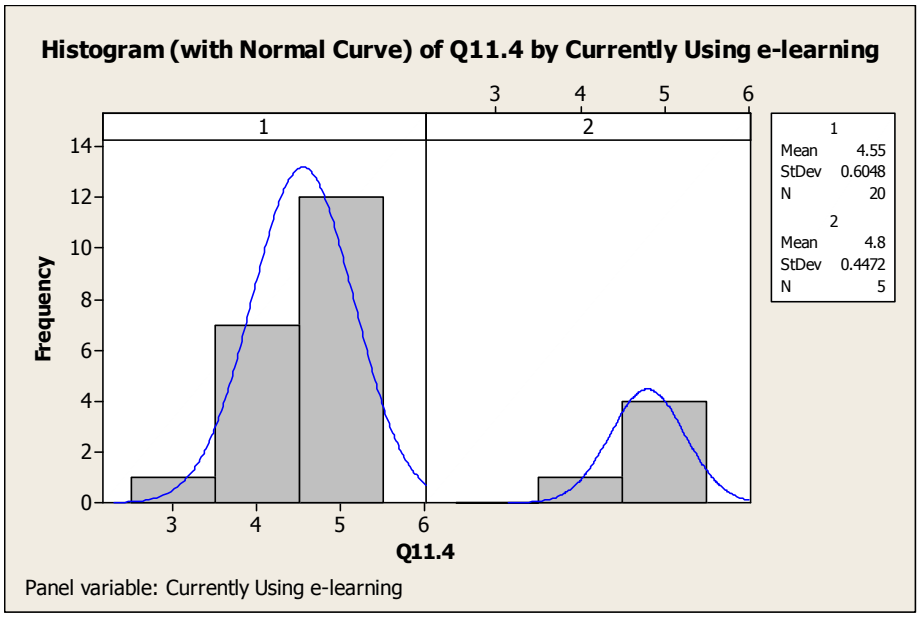
Variable	Currently Using e-learning	Variance	Minimum	Median	Maximum
Q11.1	1	0.303	3.000	5.000	5.000
	2	0.000000000	5.0000	5.0000	5.0000



Q. Our bank has an employee training program for the prevention of money laundering.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q11.4	1	20	20	0	4.550	0.135	0.605	0.366	3.000
	2	5	5	0	4.800	0.200	0.447	0.200	4.000

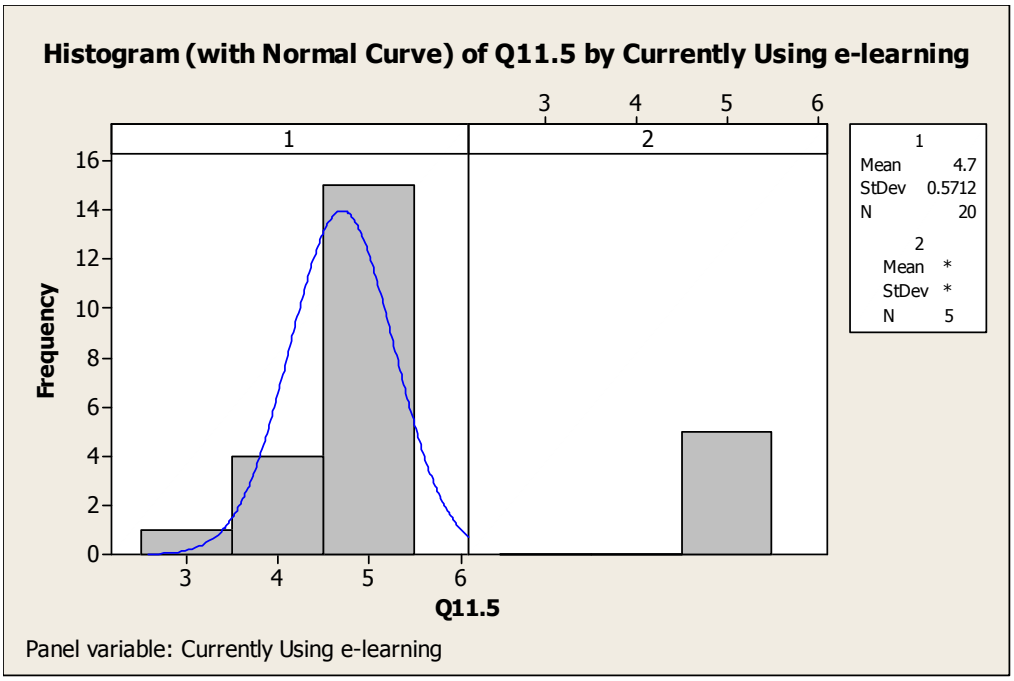
Variable	Currently Using e-learning	Median	Maximum
Q11.4	1	5.000	5.000
	2	5.000	5.000



Q. Our bank has a Money Laundering Reporting Officer (or similar role) responsible for coordinating and monitoring anti-money laundering arrangements.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev
Q11.5	1	20	20	0	4.700	0.128	0.571
	2	5	5	0	5.0000	0.000000000	0.000000000

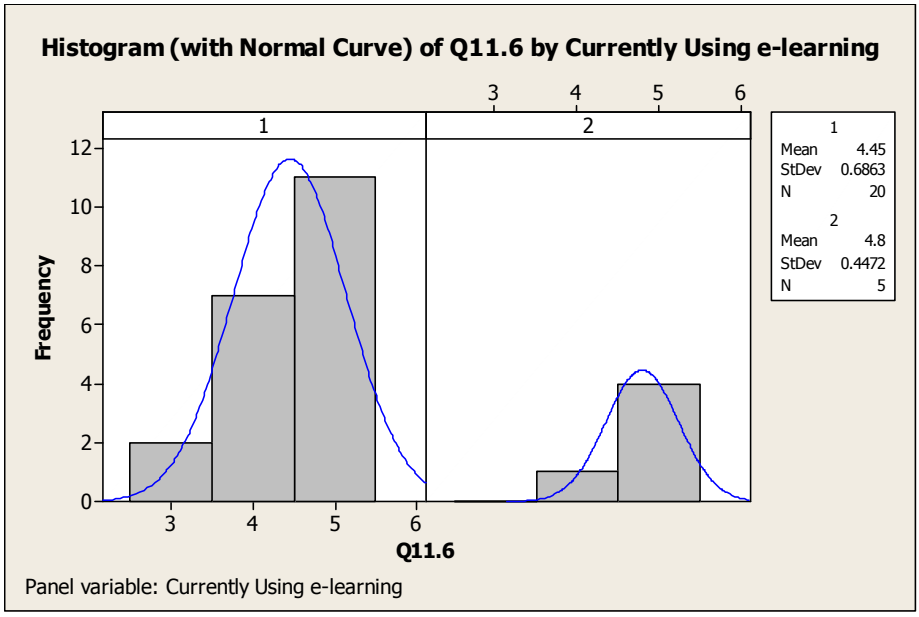
Variable	Currently Using e-learning	Variance	Minimum	Median	Maximum
Q11.5	1	0.326	3.000	5.000	5.000
	2	0.000000000	5.0000	5.0000	5.0000



Q. Our bank enforces a mandatory anti-money laundering training program for all management and staff carried out on a regular basis.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q11.6	1	20	20	0	4.450	0.153	0.686	0.471	3.000
	2	5	5	0	4.800	0.200	0.447	0.200	4.000

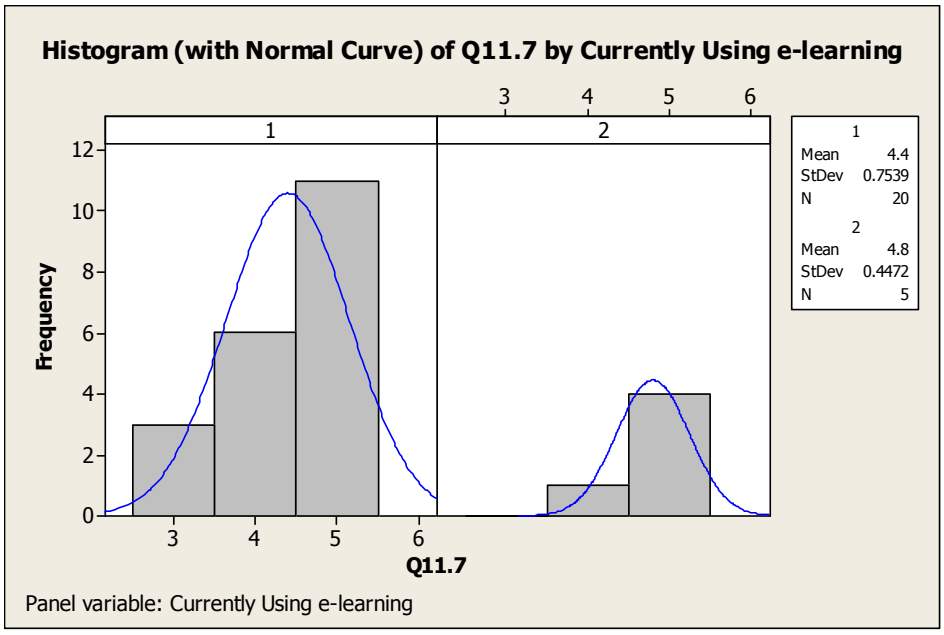
Variable	Currently Using e-learning	Median	Maximum
Q11.6	1	5.000	5.000
	2	5.000	5.000



Q. Our bank has an established process to periodically test the adequacy of AML procedures and policies.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q11.7	1	20	20	0	4.400	0.169	0.754	0.568	3.000
	2	5	5	0	4.800	0.200	0.447	0.200	4.000

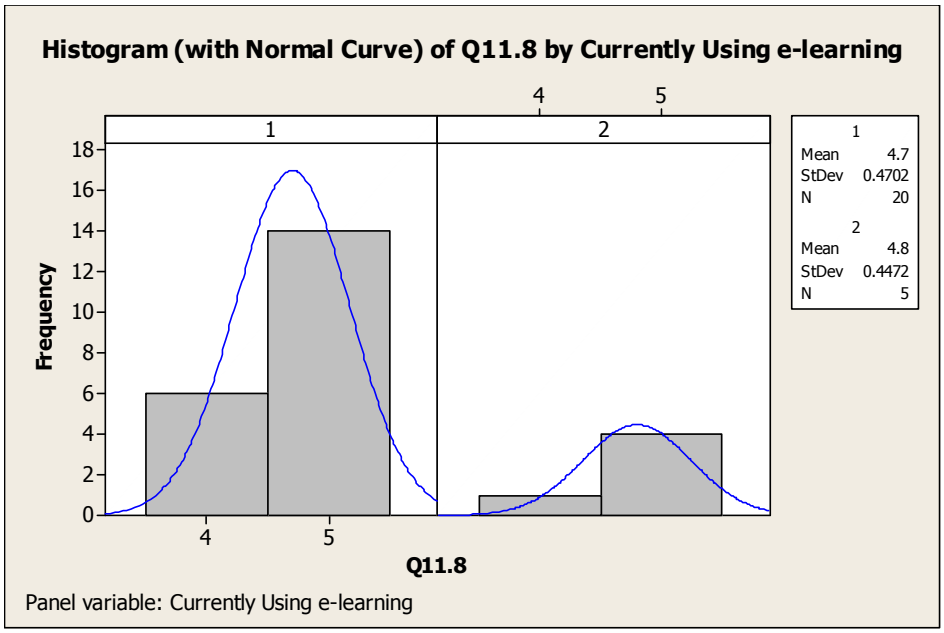
Variable	Currently Using e-learning	Median	Maximum
Q11.7	1	5.000	5.000
	2	5.000	5.000



Q. Our bank monitors and reports suspicious transactions in accordance with applicable regulations.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q11.8	1	20	20	0	4.700	0.105	0.470	0.221	4.000
	2	5	5	0	4.800	0.200	0.447	0.200	4.000

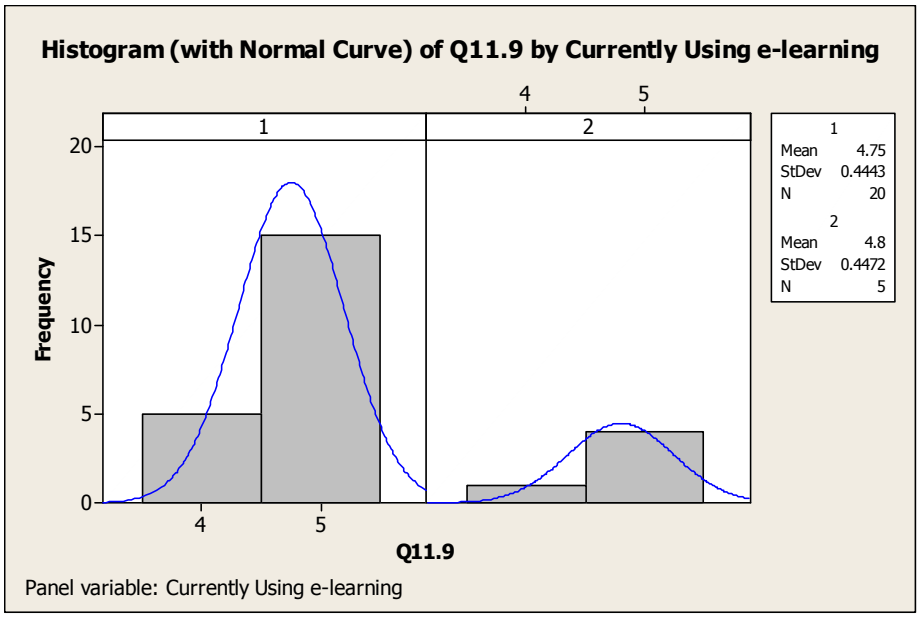
Variable	Currently Using e-learning	Median	Maximum
Q11.8	1	5.000	5.000
	2	5.000	5.000



Q. Our bank monitors transactions and accounts in the name of suspected terrorists and/or terrorist organizations and reports them to the competent authorities.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q11.9	1	20	20	0	4.7500	0.0993	0.4443	0.1974	4.0000
	2	5	5	0	4.800	0.200	0.447	0.200	4.000

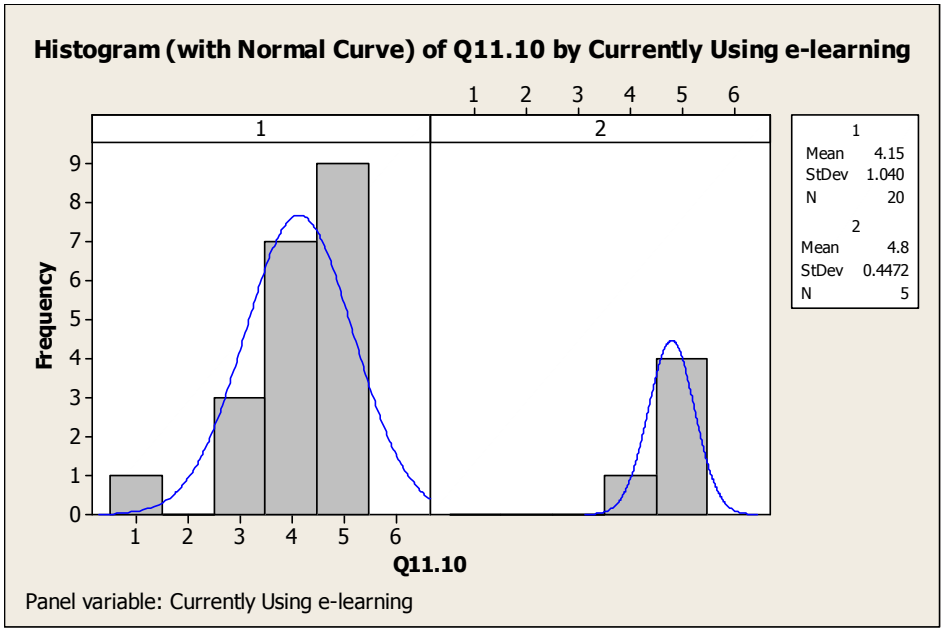
Variable	Currently Using e-learning	Median	Maximum
Q11.9	1	5.0000	5.0000
	2	5.000	5.000



Q. Our bank has implemented an independent testing program that is designed to assess our bank's compliance with international anti-money laundering and anti-terrorist financing policies and procedures and relevant laws regulations.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q11.10	1	20	20	0	4.150	0.233	1.040	1.082	1.000
	2	5	5	0	4.800	0.200	0.447	0.200	4.000

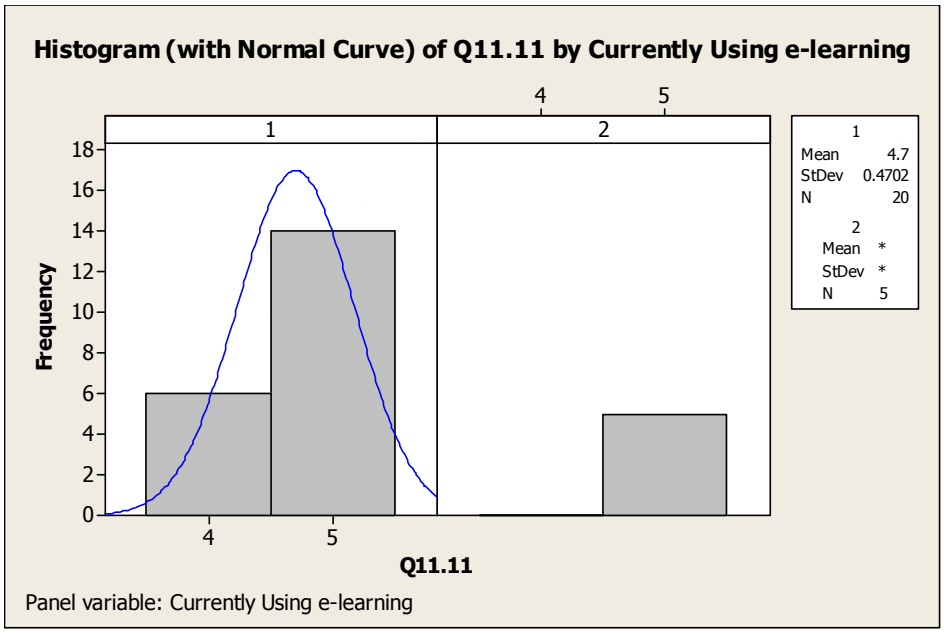
Variable	Currently Using e-learning	Median	Maximum
Q11.10	1	4.000	5.000
	2	5.000	5.000



Q. Our bank's board and senior management consider AML to be a high priority and do they actively demonstrate their commitment to the bank's AML effort.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev
Q11.11	1	20	20	0	4.700	0.105	0.470
	2	5	5	0	5.0000	0.000000000	0.000000000

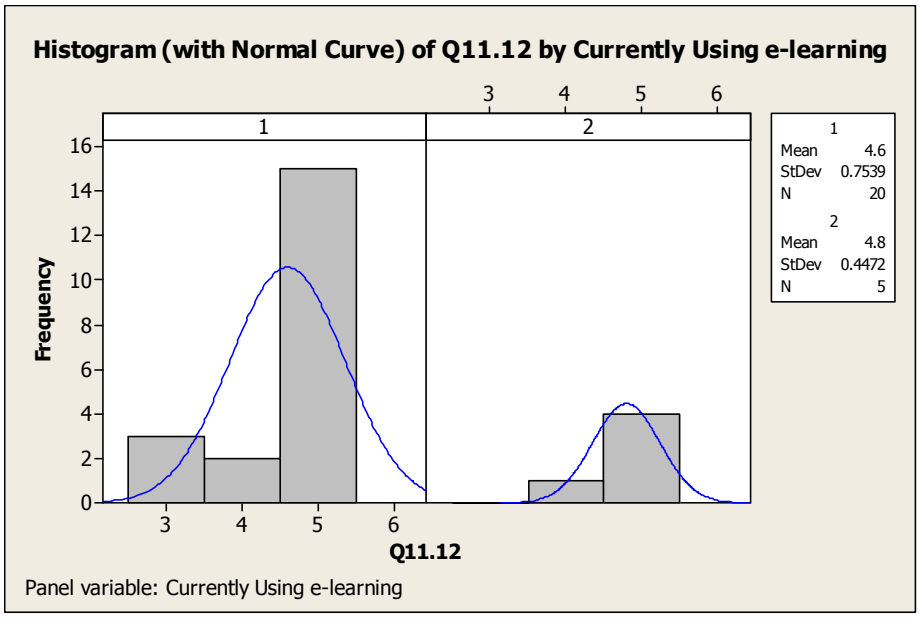
Variable	Currently Using e-learning	Variance	Minimum	Median	Maximum
Q11.11	1	0.221	4.000	5.000	5.000
	2	0.000000000	5.0000	5.0000	5.0000



Q. Our bank is confident that our suspicious activity report (SAR) processes are appropriate for the scale of internal and external reporting that are now in place.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q11.12	1	20	20	0	4.600	0.169	0.754	0.568	3.000
	2	5	5	0	4.800	0.200	0.447	0.200	4.000

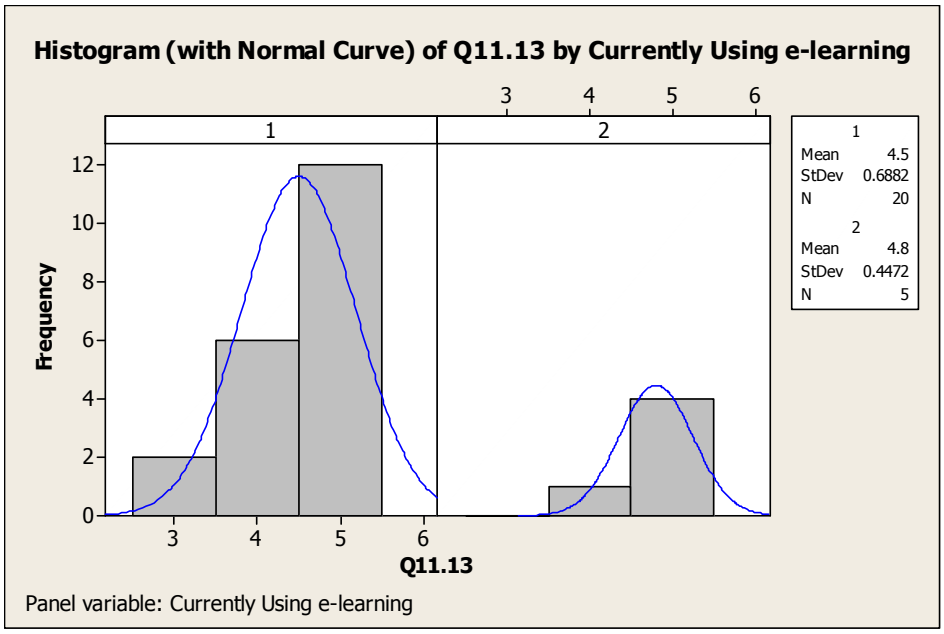
Variable	Currently Using e-learning	Median	Maximum
Q11.12	1	5.000	5.000
	2	5.000	5.000



Q. The bank regularly assesses the quality, impact, and effectiveness of AML training for staff.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q11.13	1	20	20	0	4.500	0.154	0.688	0.474	3.000
	2	5	5	0	4.800	0.200	0.447	0.200	4.000

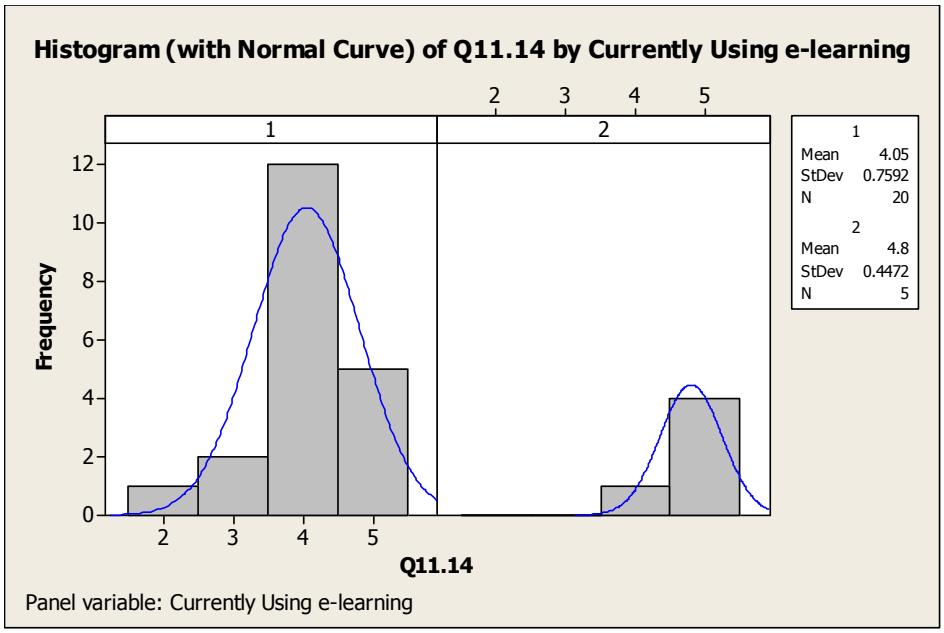
Variable	Currently Using e-learning	Median	Maximum
Q11.13	1	5.000	5.000
	2	5.000	5.000



Q. All of our staff is trained in anti-money laundering compliance.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q11.14	1	20	20	0	4.050	0.170	0.759	0.576	2.000
	2	5	5	0	4.800	0.200	0.447	0.200	4.000

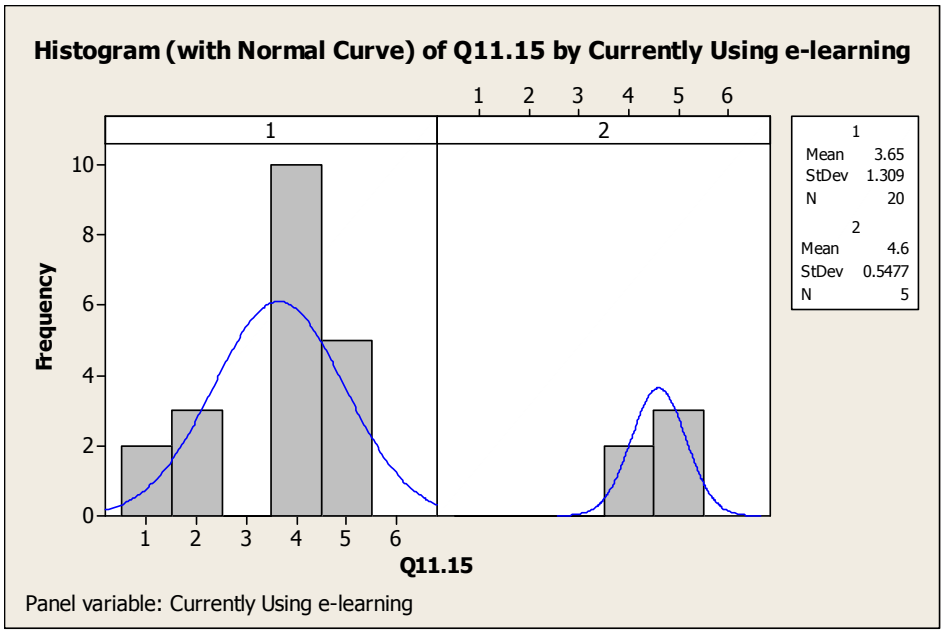
Variable	Currently Using e-learning	Median	Maximum
Q11.14	1	4.000	5.000
	2	5.000	5.000



Q. Our bank provides tailored training for specific groups in the bank (as opposed, to generic information for all).

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q11.15	1	20	20	0	3.650	0.293	1.309	1.713	1.000
	2	5	5	0	4.600	0.245	0.548	0.300	4.000

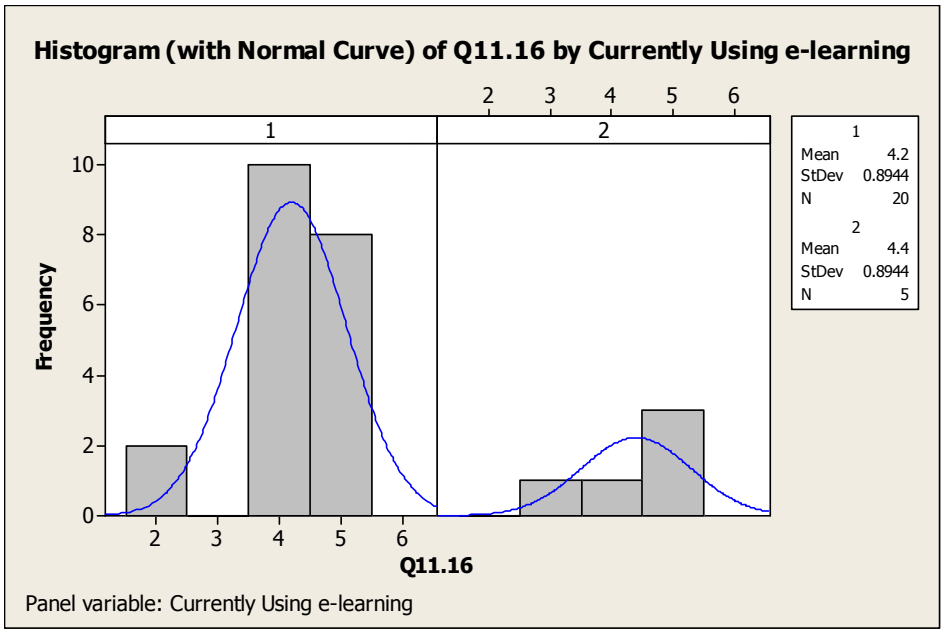
Variable	Currently Using e-learning	Median	Maximum
Q11.15	1	4.000	5.000
	2	5.000	5.000



Q. Our bank's senior management has undertaken the AML training alongside other staff members.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q11.16	1	20	20	0	4.200	0.200	0.894	0.800	2.000
	2	5	5	0	4.400	0.400	0.894	0.800	3.000

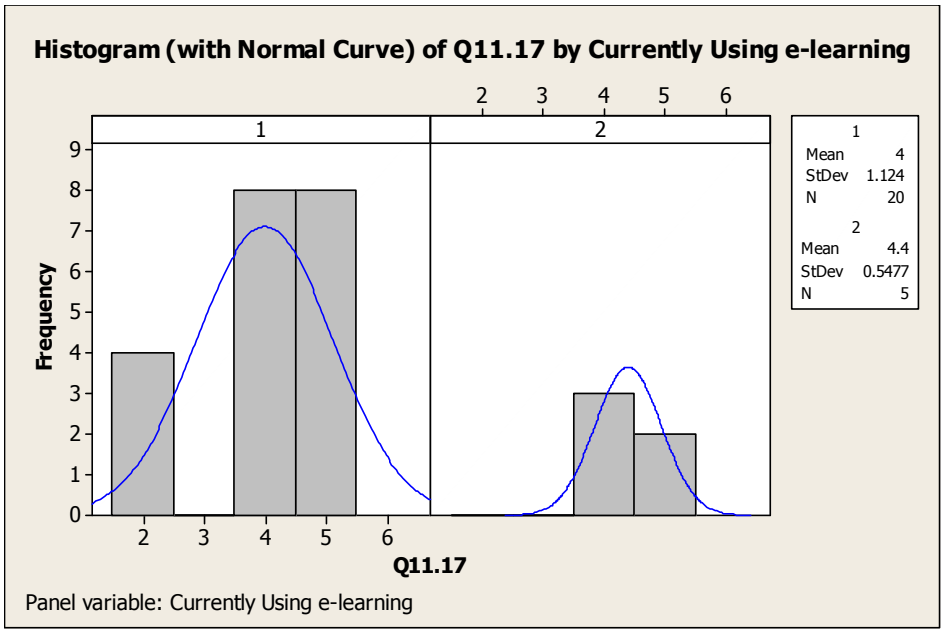
Variable	Currently Using e-learning	Median	Maximum
Q11.16	1	4.000	5.000
	2	5.000	5.000



Q. Our bank periodically updates the content of its AML training.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q11.17	1	20	20	0	4.000	0.251	1.124	1.263	2.000
	2	5	5	0	4.400	0.245	0.548	0.300	4.000

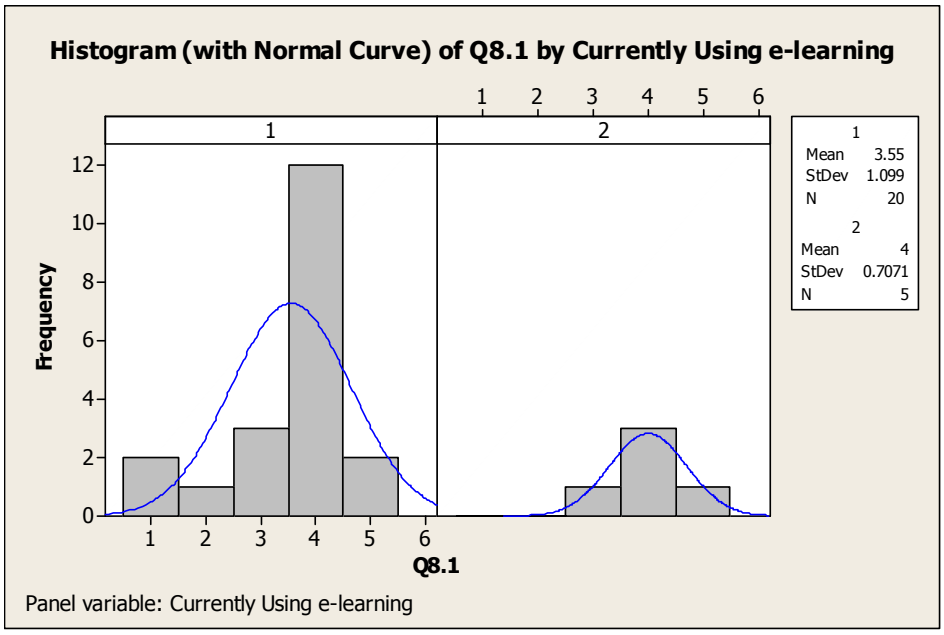
Variable	Currently Using e-learning	Median	Maximum
Q11.17	1	4.000	5.000
	2	4.000	5.000



Q. Senior management pressure is one of the key reasons for adoption of new IT innovations in our bank.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q8.1	1	20	20	0	3.550	0.246	1.099	1.208	1.000
	2	5	5	0	4.000	0.316	0.707	0.500	3.000

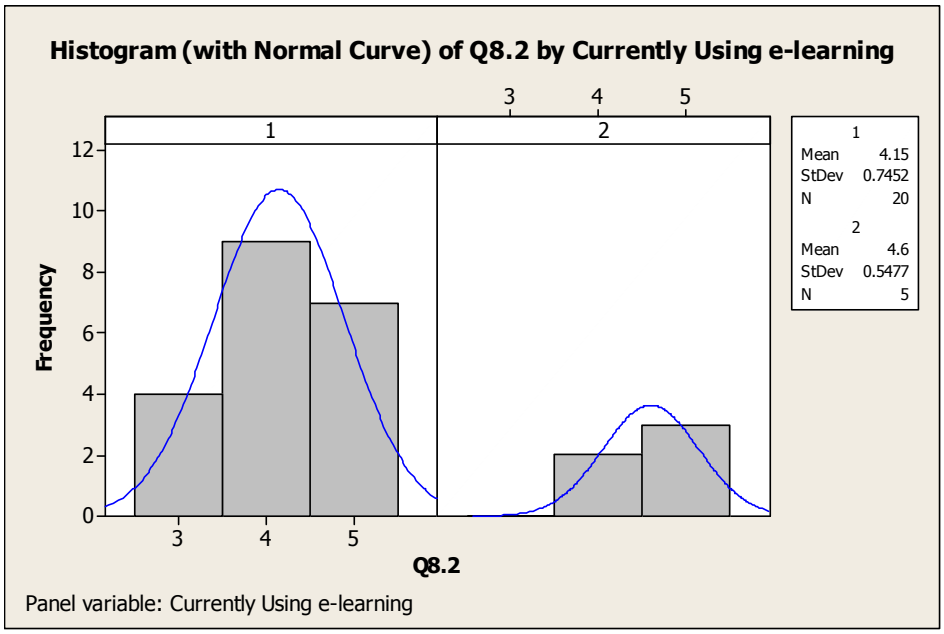
Variable	Currently Using e-learning	Median	Maximum
Q8.1	1	4.000	5.000
	2	4.000	5.000



Q. Top Management has a positive attitude towards using information technology in general and use of e-learning in specific.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q8.2	1	20	20	0	4.150	0.167	0.745	0.555	3.000
	2	5	5	0	4.600	0.245	0.548	0.300	4.000

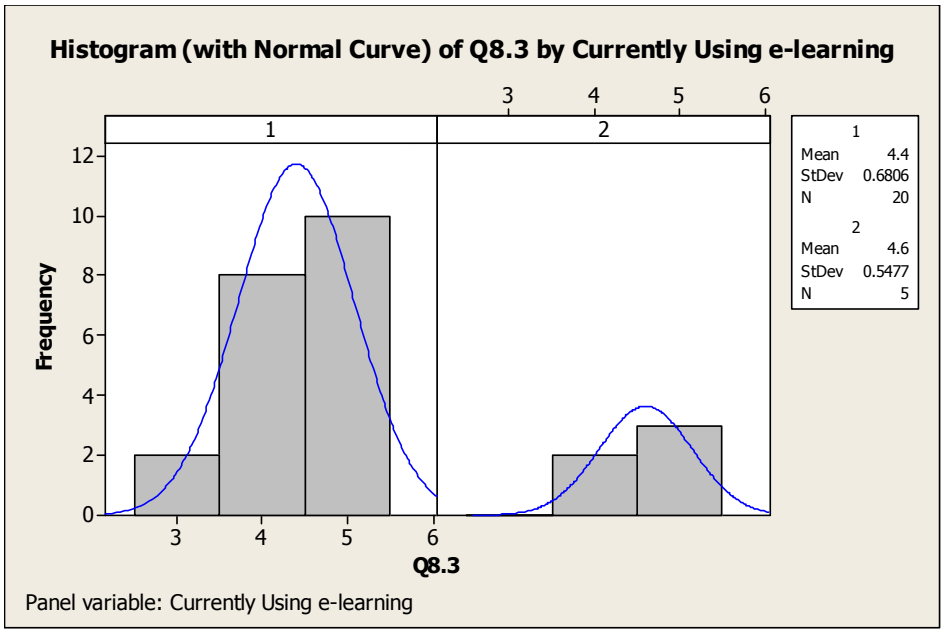
Variable	Currently Using e-learning	Median	Maximum
Q8.2	1	4.000	5.000
	2	5.000	5.000



Q. Top and mid level management thinks positively toward information technology interventions in daily/routine tasks.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q8.3	1	20	20	0	4.400	0.152	0.681	0.463	3.000
	2	5	5	0	4.600	0.245	0.548	0.300	4.000

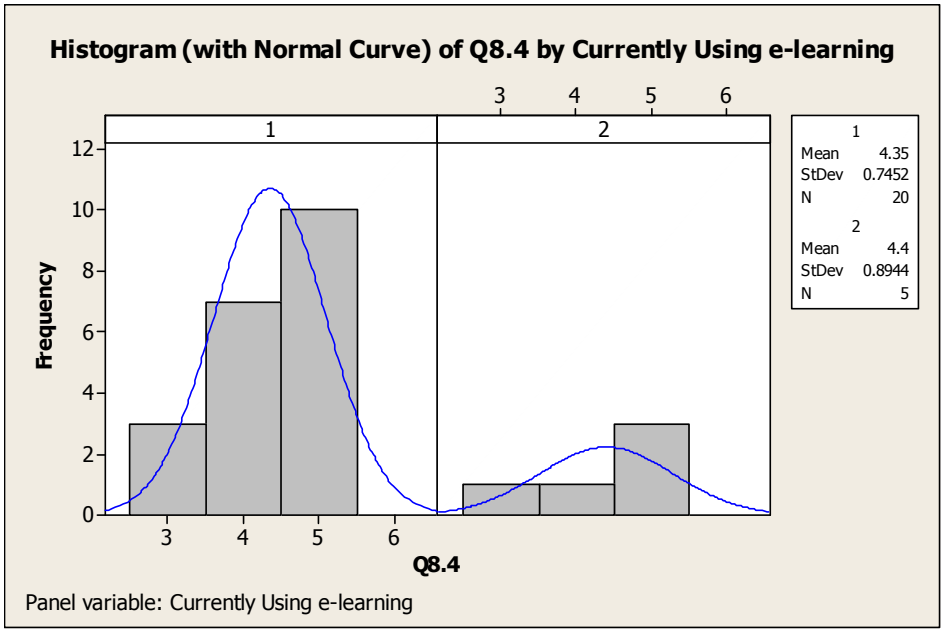
Variable	Currently Using e-learning	Median	Maximum
Q8.3	1	4.500	5.000
	2	5.000	5.000



Q. Top management in the bank actively participates in establishing a vision and formulating strategies for utilizing information technology systems.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q8.4	1	20	20	0	4.350	0.167	0.745	0.555	3.000
	2	5	5	0	4.400	0.400	0.894	0.800	3.000

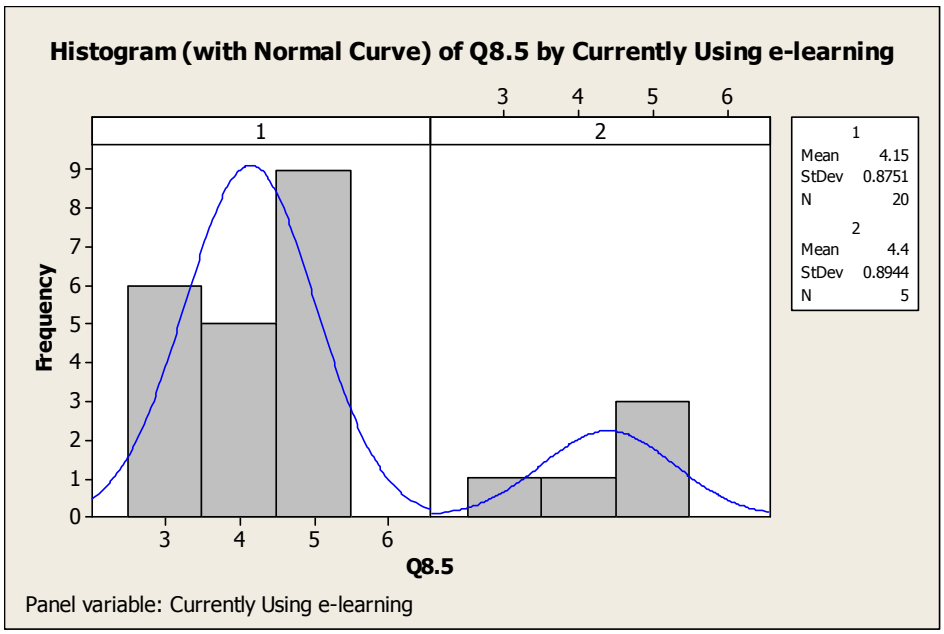
Variable	Currently Using e-learning	Median	Maximum
Q8.4	1	4.500	5.000
	2	5.000	5.000



Q. My immediate supervisor encourages me to learn about and/or apply new IT technologies.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q8.5	1	20	20	0	4.150	0.196	0.875	0.766	3.000
	2	5	5	0	4.400	0.400	0.894	0.800	3.000

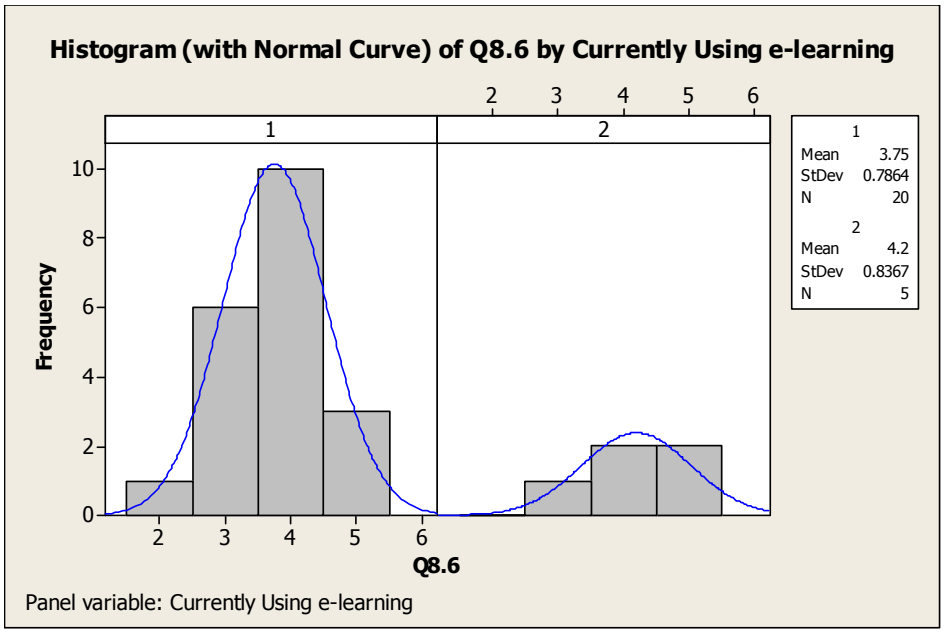
Variable	Currently Using e-learning	Median	Maximum
Q8.5	1	4.000	5.000
	2	5.000	5.000



Q. There is a well-placed champion who facilitates the acceptance and implementation of information technology initiatives (e.g., introduction of e-learning for anti-money laundry training) in the bank.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q8.6	1	20	20	0	3.750	0.176	0.786	0.618	2.000
	2	5	5	0	4.200	0.374	0.837	0.700	3.000

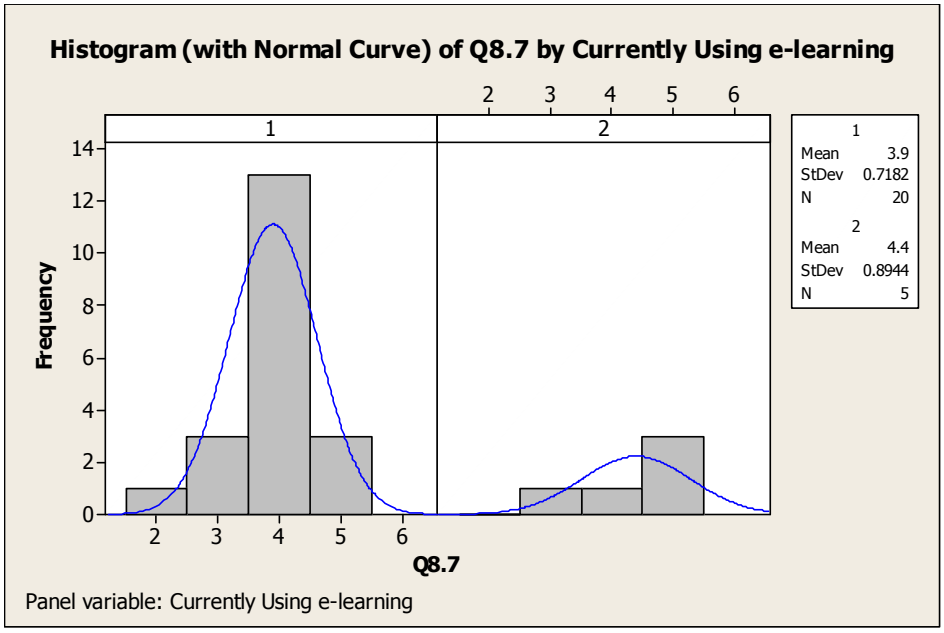
Variable	Currently Using e-learning	Median	Maximum
Q8.6	1	4.000	5.000
	2	4.000	5.000



Q. Top management in the bank typically assigns project champions (focal point) for overseeing the utilization of information technology in the bank.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q8.7	1	20	20	0	3.900	0.161	0.718	0.516	2.000
	2	5	5	0	4.400	0.400	0.894	0.800	3.000

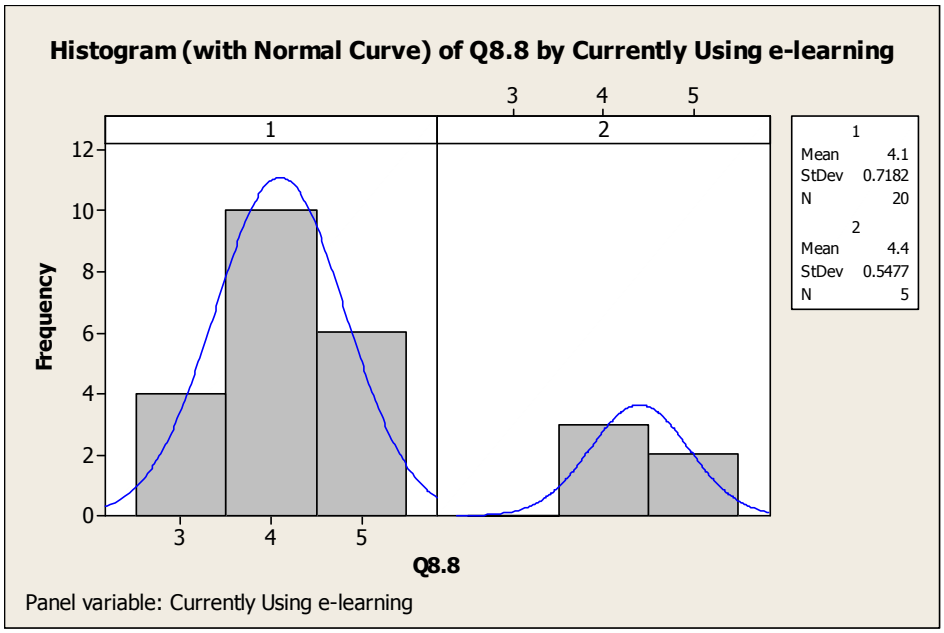
Variable	Currently Using e-learning	Median	Maximum
Q8.7	1	4.000	5.000
	2	5.000	5.000



Q. The bank's training needs and delivery solutions (including those for e-learning) are centrally planned.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q8.8	1	20	20	0	4.100	0.161	0.718	0.516	3.000
	2	5	5	0	4.400	0.245	0.548	0.300	4.000

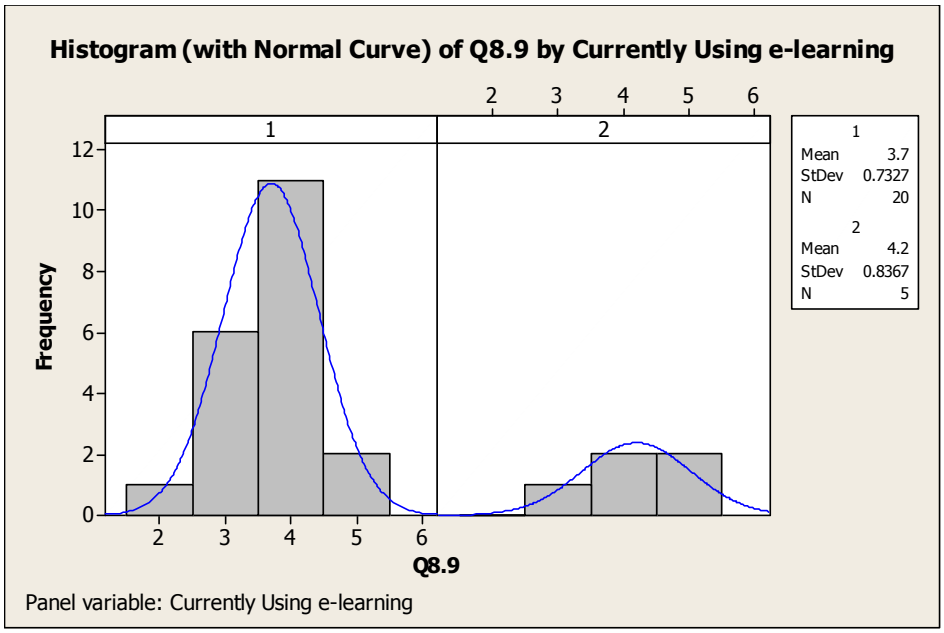
Variable	Currently Using e-learning	Median	Maximum
Q8.8	1	4.000	5.000
	2	4.000	5.000



Q. The anti-money laundering compliance officer (or equivalent role) has the authority to chose and select different training modalities for anti-money laundering.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q8.9	1	20	20	0	3.700	0.164	0.733	0.537	2.000
	2	5	5	0	4.200	0.374	0.837	0.700	3.000

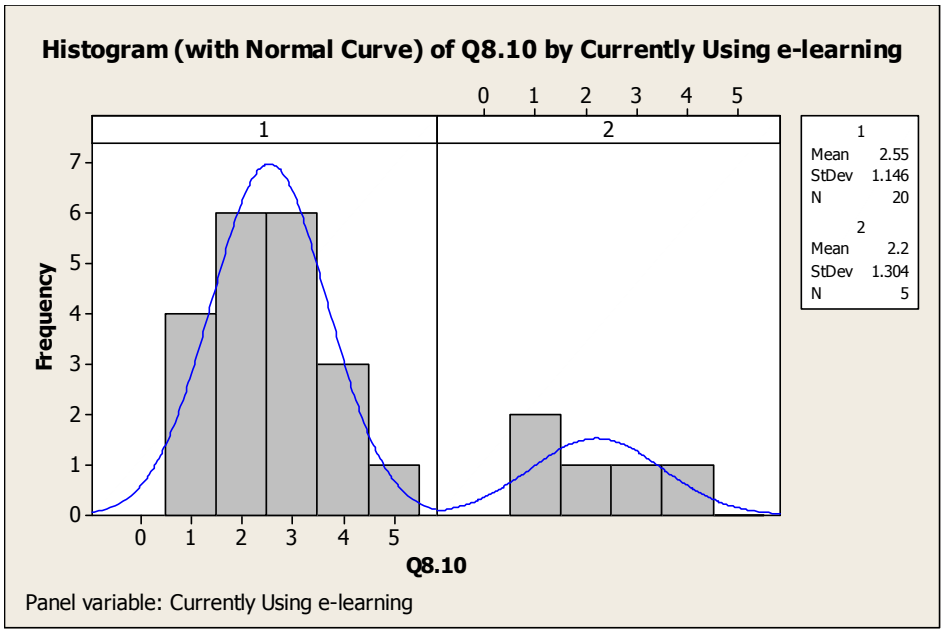
Variable	Currently Using e-learning	Median	Maximum
Q8.9	1	4.000	5.000
	2	4.000	5.000



Q. Our bank has a long bureaucratic process for making decisions about adoption of a technological intervention such as the use of e-learning for anti-money laundering training.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q8.10	1	20	20	0	2.550	0.256	1.146	1.313	1.000
	2	5	5	0	2.200	0.583	1.304	1.700	1.000

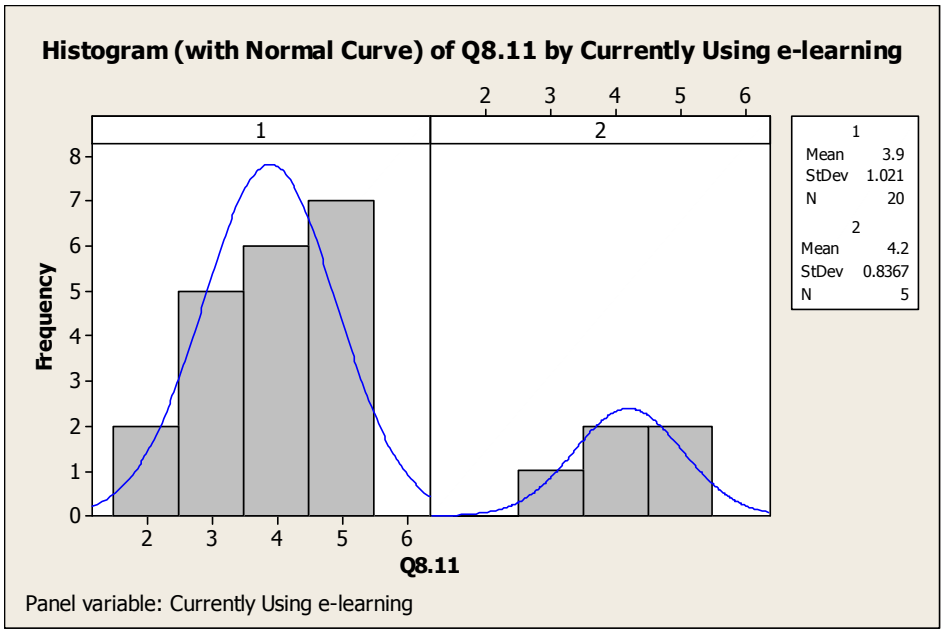
Variable	Currently Using e-learning	Median	Maximum
Q8.10	1	2.500	5.000
	2	2.000	4.000



Q. Our bank has a culture and tradition of using information technology whenever appropriate.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q8.11	1	20	20	0	3.900	0.228	1.021	1.042	2.000
	2	5	5	0	4.200	0.374	0.837	0.700	3.000

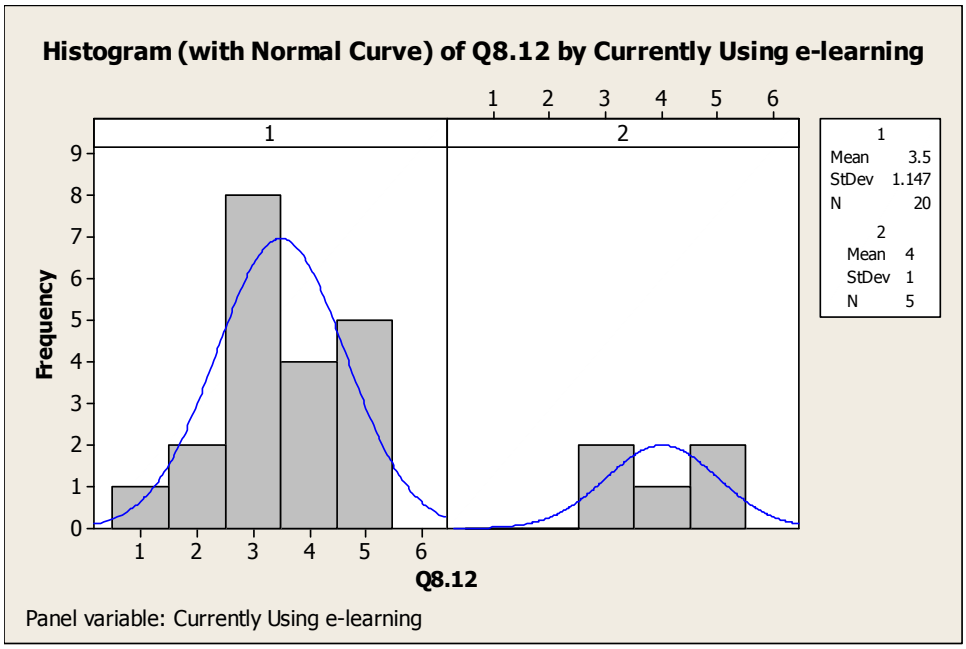
Variable	Currently Using e-learning	Median	Maximum
Q8.11	1	4.000	5.000
	2	4.000	5.000



Q. Our bank feels that it will be left behind if it does not adopt technologies such as e-learning.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q8.12	1	20	20	0	3.500	0.256	1.147	1.316	1.000
	2	5	5	0	4.000	0.447	1.000	1.000	3.000

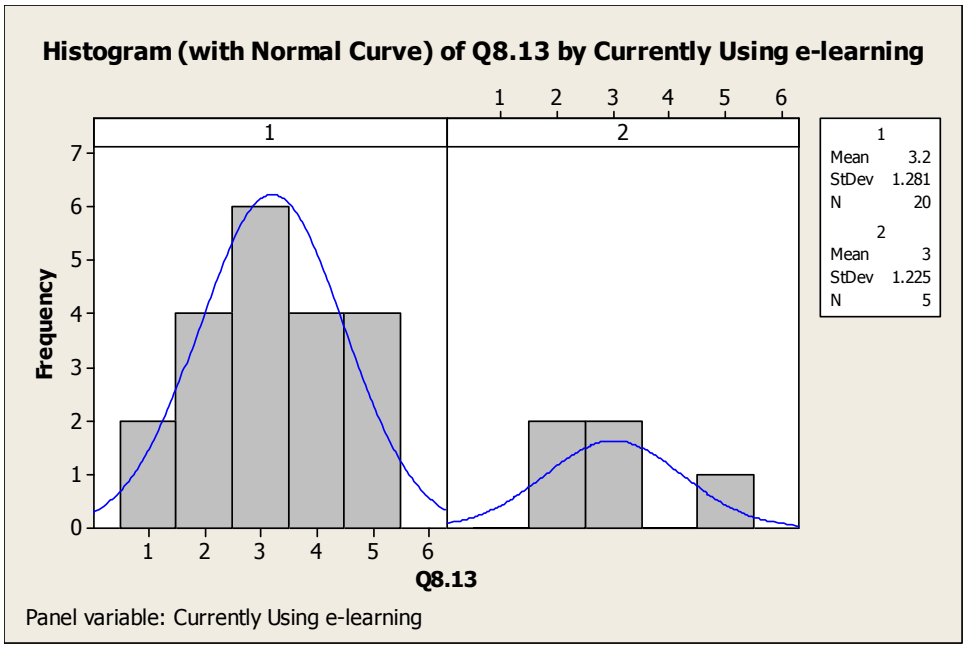
Variable	Currently Using e-learning	Median	Maximum
Q8.12	1	3.000	5.000
	2	4.000	5.000



Q. Our employees typically have the free time to attend workshops and other traditional training events.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q8.13	1	20	20	0	3.200	0.287	1.281	1.642	1.000
	2	5	5	0	3.000	0.548	1.225	1.500	2.000

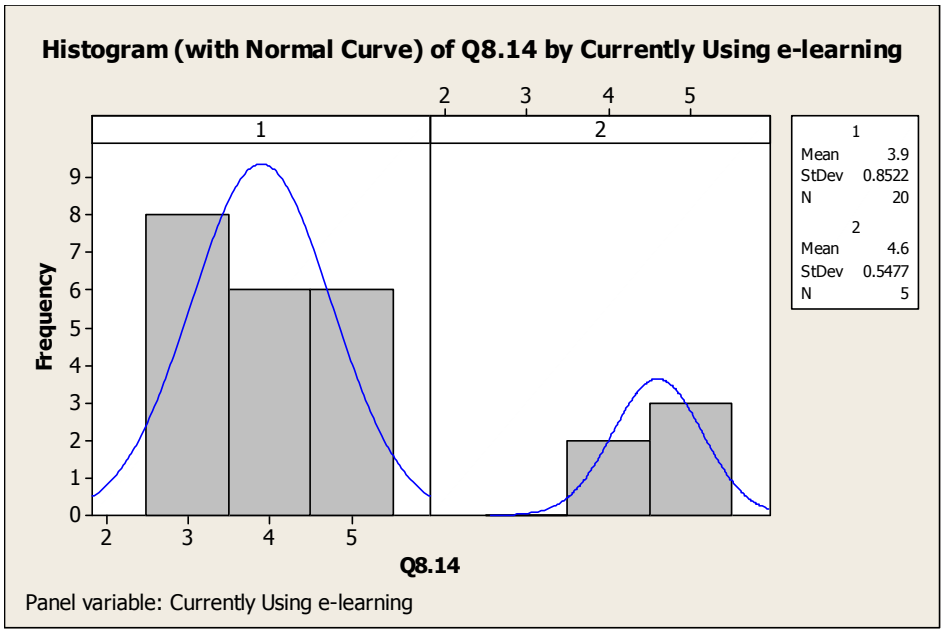
Variable	Currently Using e-learning	Median	Maximum
Q8.13	1	3.000	5.000
	2	3.000	5.000



Q. Our bank has enough resource to invest in a long-term e-learning platform to handle the anti-money laundering compliance training.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q8.14	1	20	20	0	3.900	0.191	0.852	0.726	3.000
	2	5	5	0	4.600	0.245	0.548	0.300	4.000

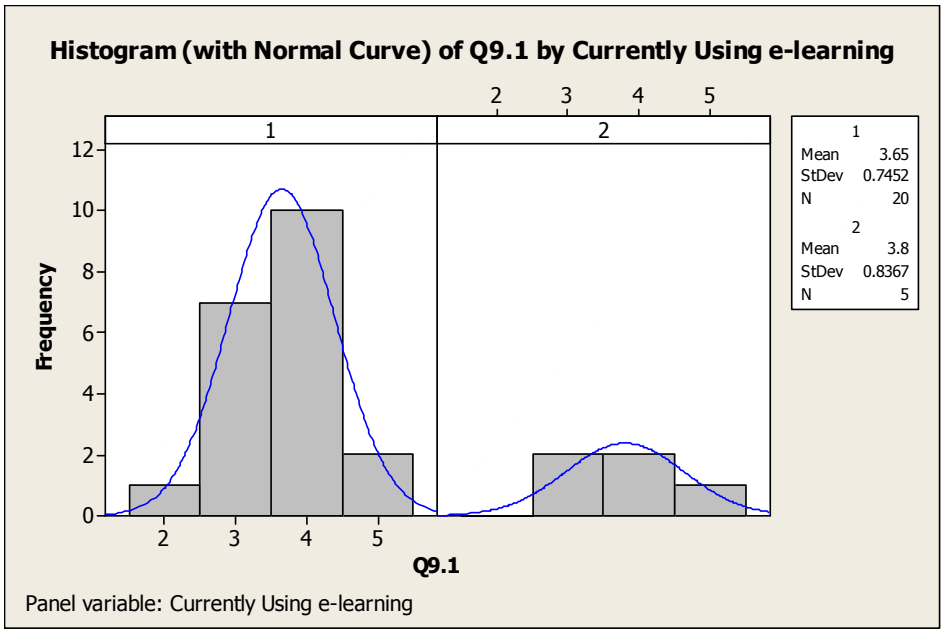
Variable	Currently Using e-learning	Median	Maximum
Q8.14	1	4.000	5.000
	2	5.000	5.000



Q. There is pressure from our industry to use technology to address anti-money laundering compliance.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q9.1	1	20	20	0	3.650	0.167	0.745	0.555	2.000
	2	5	5	0	3.800	0.374	0.837	0.700	3.000

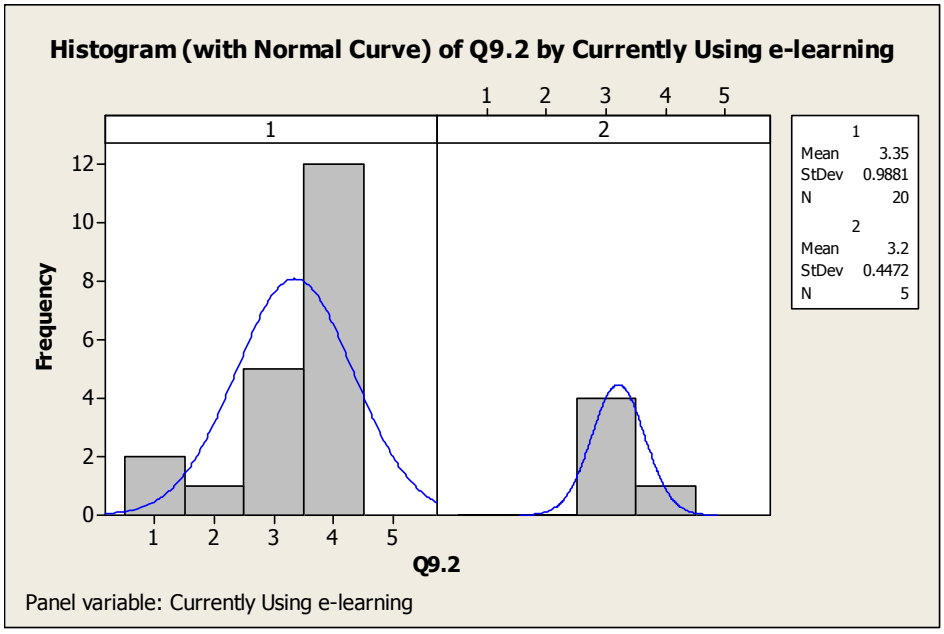
Variable	Currently Using e-learning	Median	Maximum
Q9.1	1	4.000	5.000
	2	4.000	5.000



Q. I feel pressured by my colleagues and peers to be effective in using IT technology in establishing anti-money laundering compliance in the bank.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q9.2	1	20	20	0	3.350	0.221	0.988	0.976	1.000
	2	5	5	0	3.200	0.200	0.447	0.200	3.000

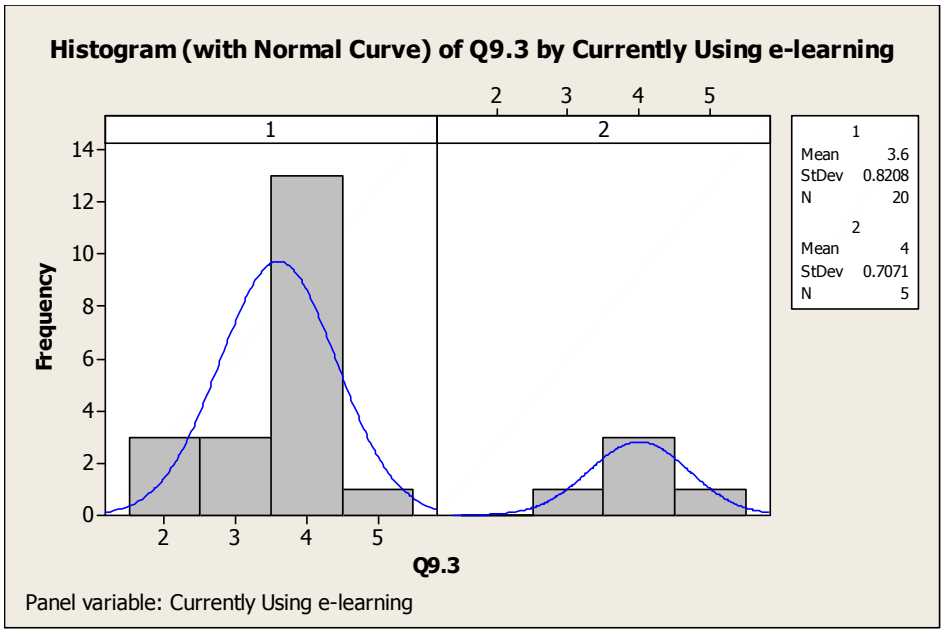
Variable	Currently Using e-learning	Median	Maximum
Q9.2	1	4.000	4.000
	2	3.000	4.000



Q. Not using e-Learning for anti-money laundering training may have an impact on our bank's competitive edge.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q9.3	1	20	20	0	3.600	0.184	0.821	0.674	2.000
	2	5	5	0	4.000	0.316	0.707	0.500	3.000

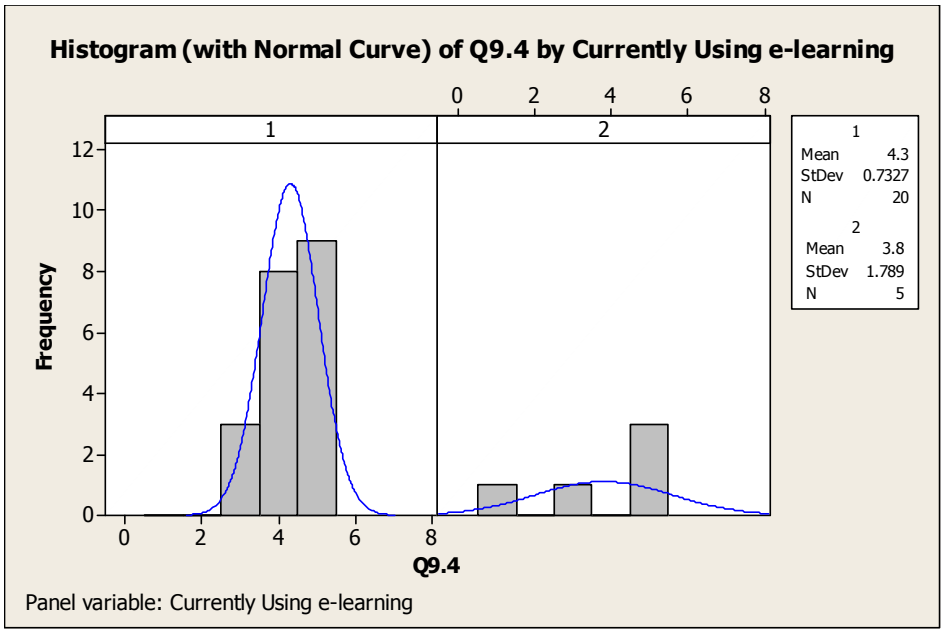
Variable	Currently Using e-learning	Median	Maximum
Q9.3	1	4.000	5.000
	2	4.000	5.000



Q. The bank is under pressure from the government and the international compliance agencies to implement anti-money laundering training efficiently and in a timely manner.

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q9.4	1	20	20	0	4.300	0.164	0.733	0.537	3.000
	2	5	5	0	3.800	0.800	1.789	3.200	1.000

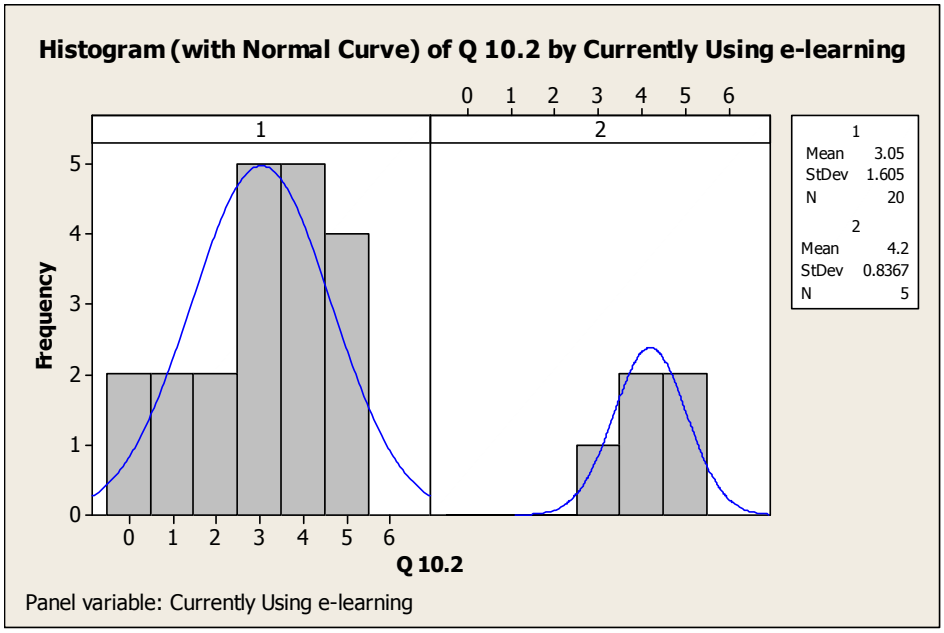
Variable	Currently Using e-learning	Median	Maximum
Q9.4	1	4.000	5.000
	2	5.000	5.000



Q. How well is the bank using (Internet and Intranet) technology to run its business?

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance
Q 10.2	1	20	20	0	3.050	0.359	1.605	2.576
	2	5	5	0	4.200	0.374	0.837	0.700

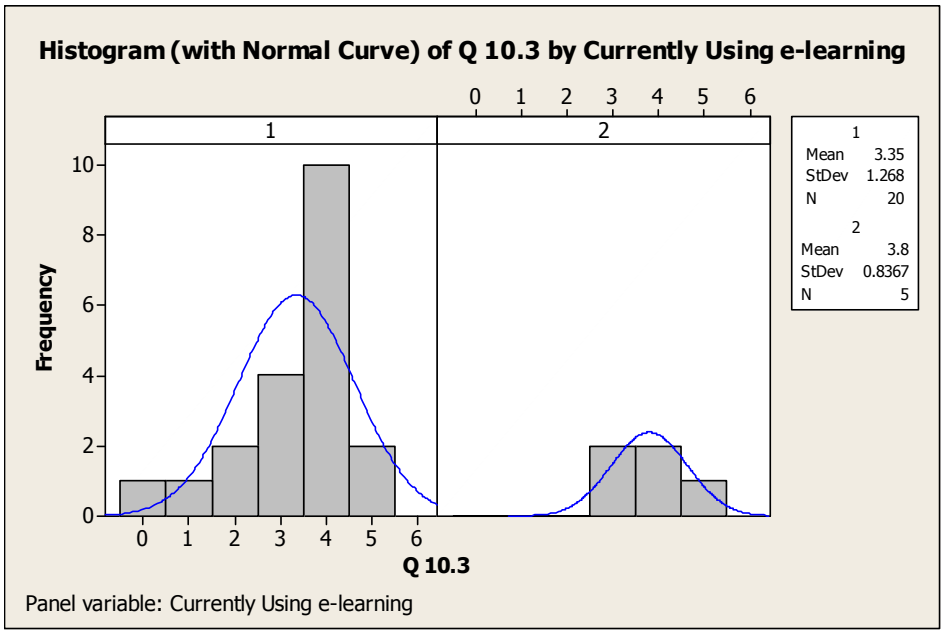
Variable	Currently Using e-learning	Minimum	Median	Maximum
Q 10.2	1	0.000000000	3.000	5.000
	2	3.000	4.000	5.000



Q. How prepared (skills, knowledge, motivation) is your workforce to compete and win in the high-tech, new economy?

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance
Q 10.3	1	20	20	0	3.350	0.284	1.268	1.608
	2	5	5	0	3.800	0.374	0.837	0.700

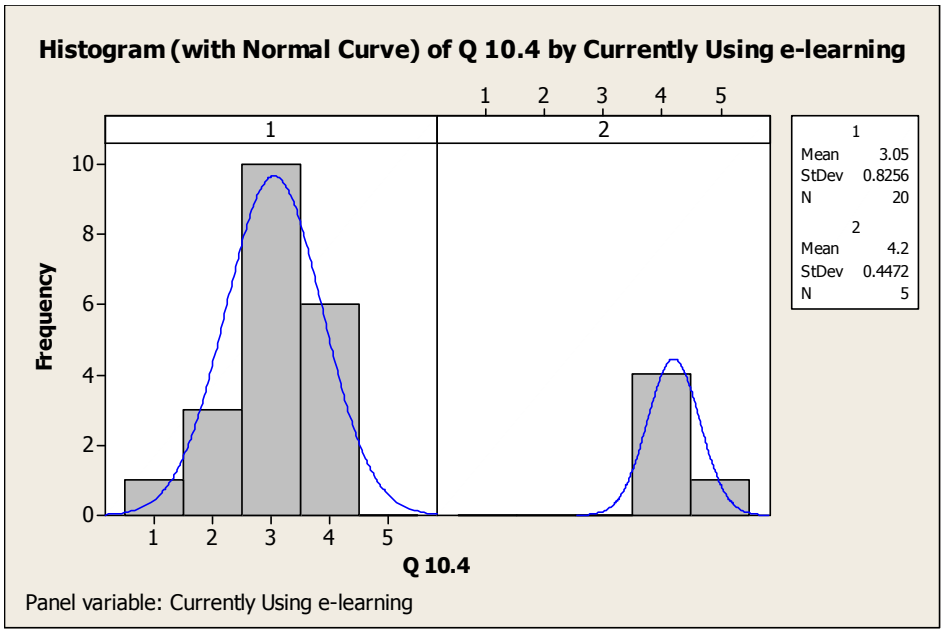
Variable	Currently Using e-learning	Minimum	Median	Maximum
Q 10.3	1	0.000000000	4.000	5.000
	2	3.000	4.000	5.000



Q. How the bank does define "e-learning?"

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q 10.4	1	20	20	0	3.050	0.185	0.826	0.682	1.000
	2	5	5	0	4.200	0.200	0.447	0.200	4.000

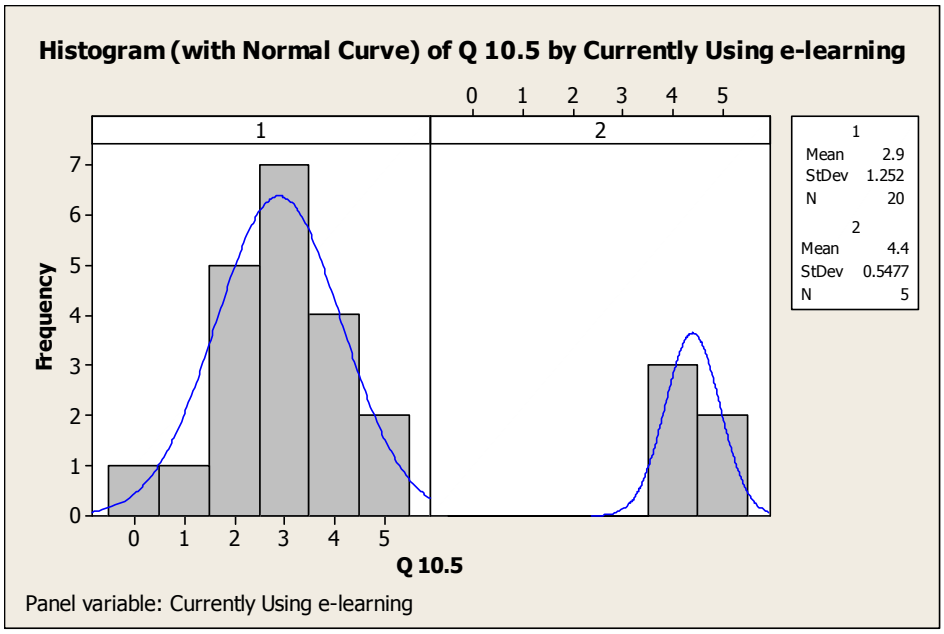
Variable	Currently Using e-learning	Median	Maximum
Q 10.4	1	3.000	4.000
	2	4.000	5.000



Q. How will the bank overcomes any bad prior experiences you and others have had with technology based learning?

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance
Q 10.5	1	20	20	0	2.900	0.280	1.252	1.568
	2	5	5	0	4.400	0.245	0.548	0.300

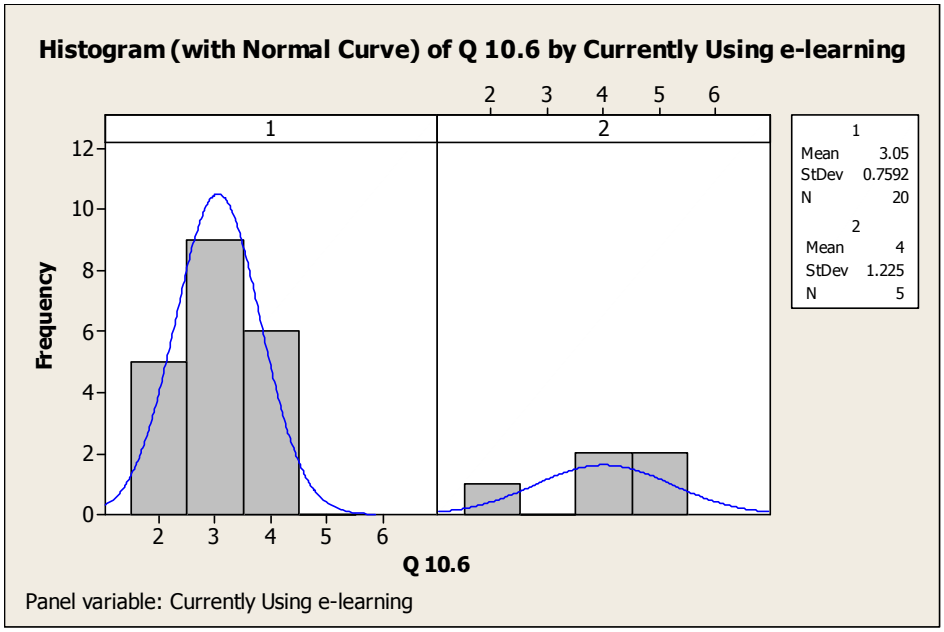
Variable	Currently Using e-learning	Minimum	Median	Maximum
Q 10.5	1	0.000000000	3.000	5.000
	2	4.000	4.000	5.000



Q. How much access do people have to the web (anyone, any time, anywhere)?

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q 10.6	1	20	20	0	3.050	0.170	0.759	0.576	2.000
	2	5	5	0	4.000	0.548	1.225	1.500	2.000

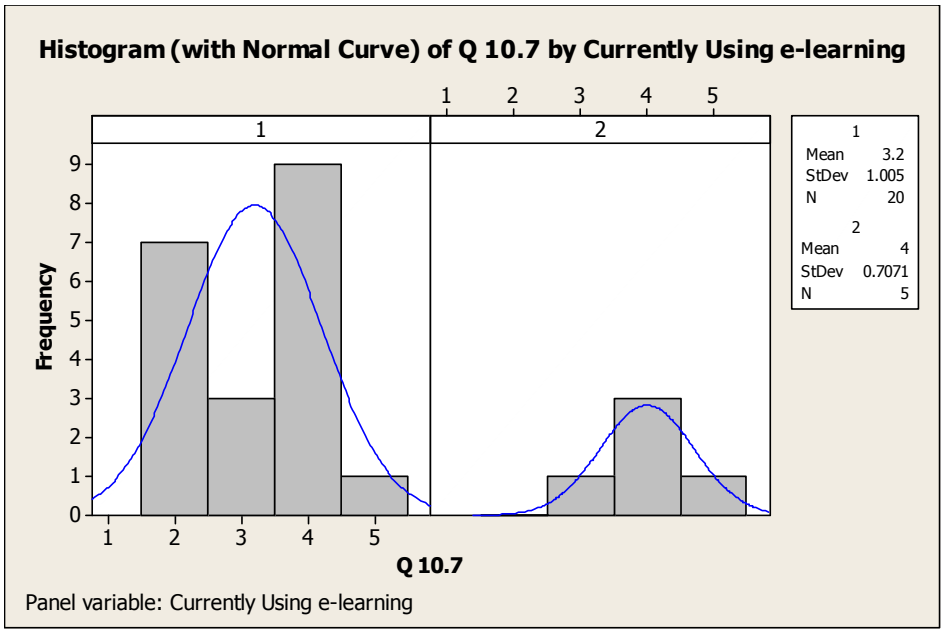
Variable	Currently Using e-learning	Median	Maximum
Q 10.6	1	3.000	4.000
	2	4.000	5.000



Q. Do you differentiate between instructional needs (training) and informational needs (knowledge management), and do you make the right decisions about when to use each?

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q 10.7	1	20	20	0	3.200	0.225	1.005	1.011	2.000
	2	5	5	0	4.000	0.316	0.707	0.500	3.000

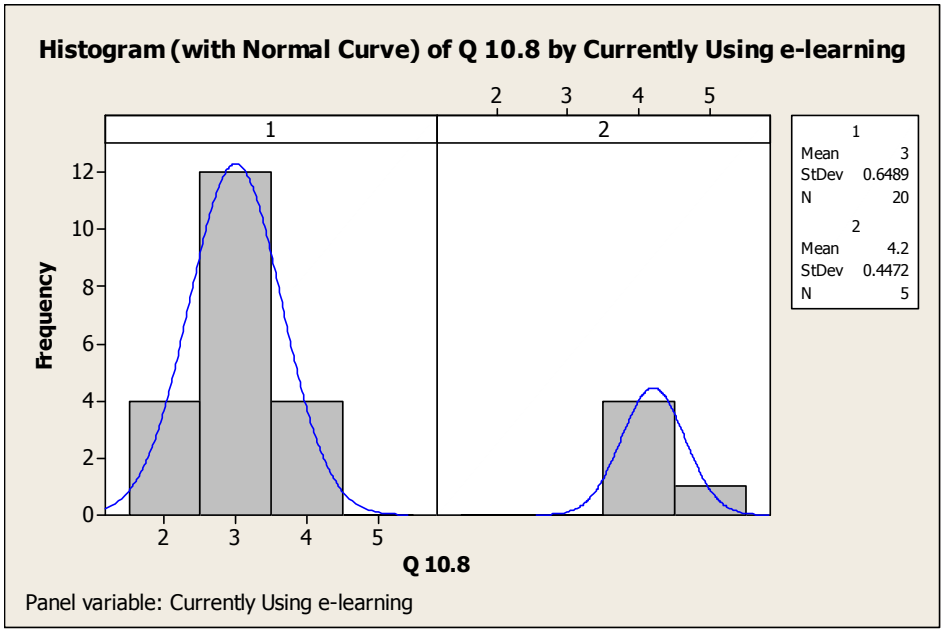
Variable	Currently Using e-learning	Median	Maximum
Q 10.7	1	3.500	5.000
	2	4.000	5.000



Q. What is the level of the bank's expertise in instructional and information design?

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q 10.8	1	20	20	0	3.000	0.145	0.649	0.421	2.000
	2	5	5	0	4.200	0.200	0.447	0.200	4.000

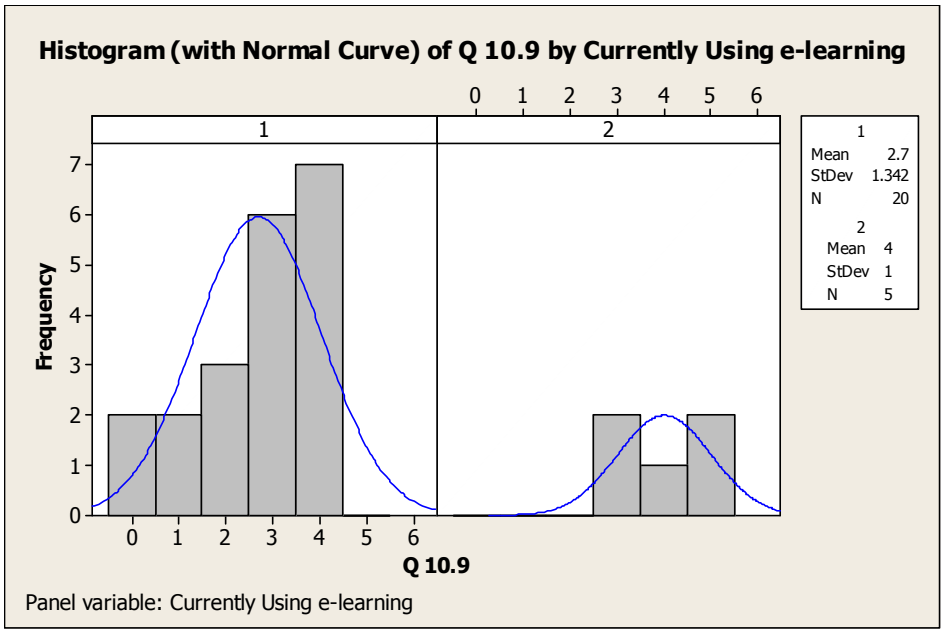
Variable	Currently Using e-learning	Median	Maximum
Q 10.8	1	3.000	4.000
	2	4.000	5.000



Q. Is the bank ready to move beyond a predominant reliance on classroom training to a more balanced approach with e-learning?

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance
Q 10.9	1	20	20	0	2.700	0.300	1.342	1.800
	2	5	5	0	4.000	0.447	1.000	1.000

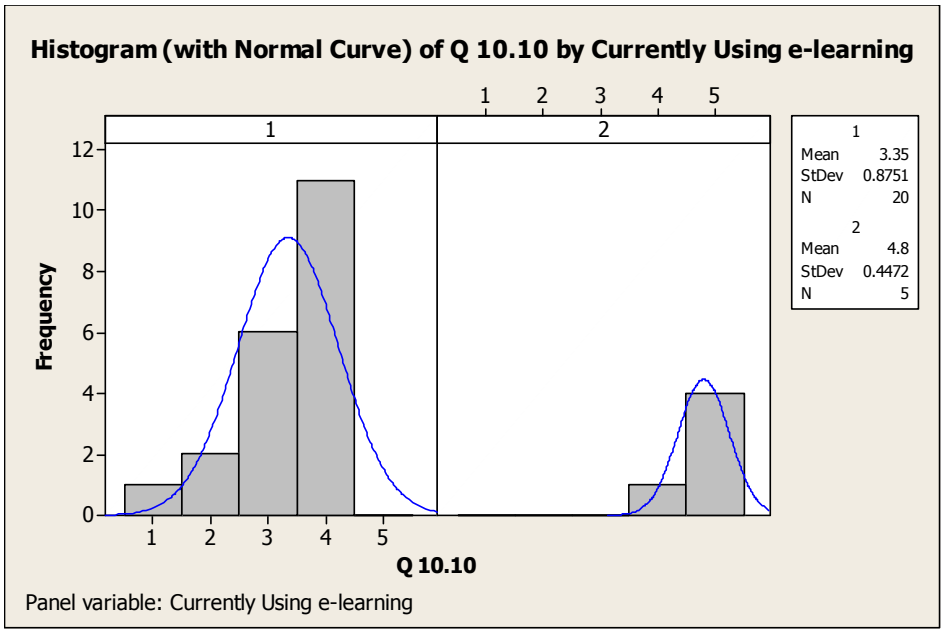
Variable	Currently Using e-learning	Minimum	Median	Maximum
Q 10.9	1	0.000000000	3.000	4.000
	2	3.000	4.000	5.000



Q10.10) Does senior management support e-learning?

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q 10.10	1	20	20	0	3.350	0.196	0.875	0.766	1.000
	2	5	5	0	4.800	0.200	0.447	0.200	4.000

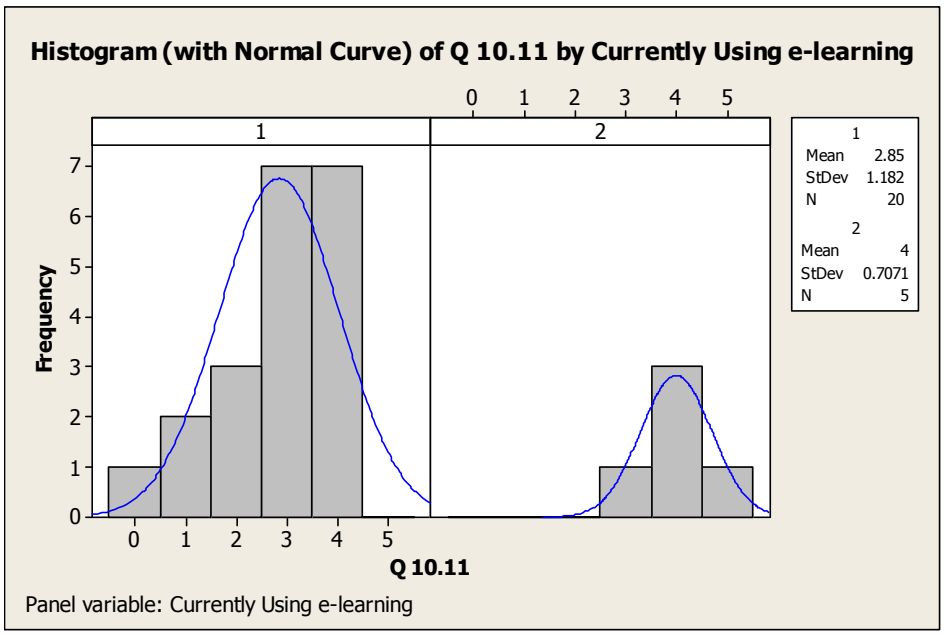
Variable	Currently Using e-learning	Median	Maximum
Q 10.10	1	4.000	4.000
	2	5.000	5.000



Q. Does the bank have a Change management plan for introducing e-learning?

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance
Q 10.11	1	20	20	0	2.850	0.264	1.182	1.397
	2	5	5	0	4.000	0.316	0.707	0.500

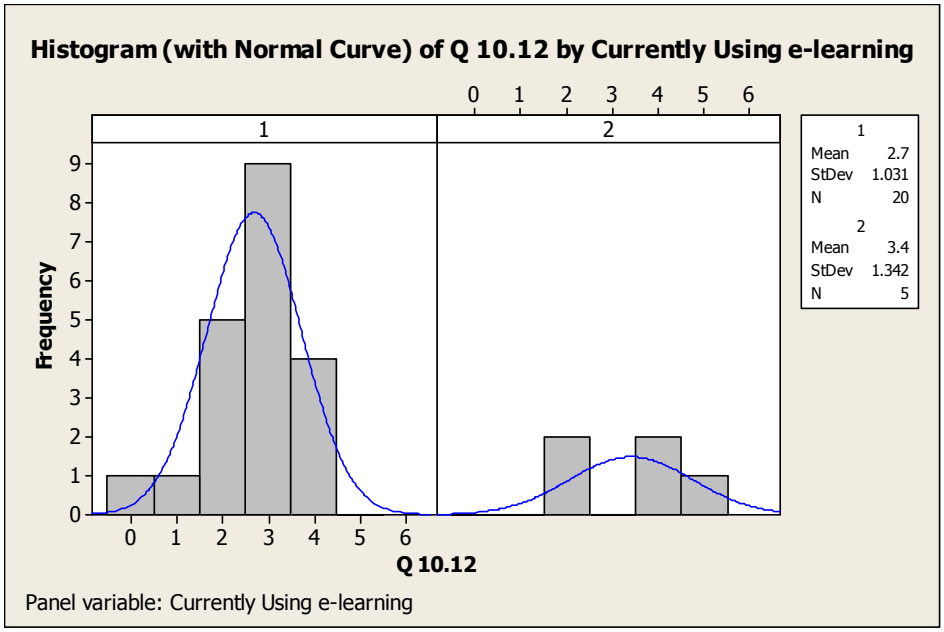
Variable	Currently Using e-learning	Minimum	Median	Maximum
Q 10.11	1	0.000000000	3.000	4.000
	2	3.000	4.000	5.000



Q. Can the bank demonstrate the business benefits of e-learning?

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance
Q 10.12	1	20	20	0	2.700	0.231	1.031	1.063
	2	5	5	0	3.400	0.600	1.342	1.800

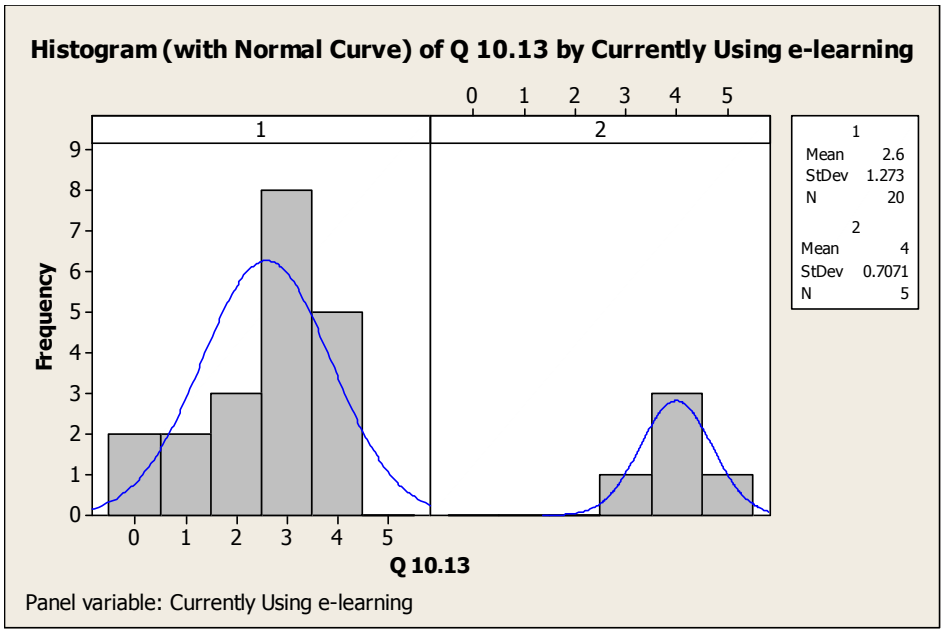
Variable	Currently Using e-learning	Minimum	Median	Maximum
Q 10.12	1	0.000000000	3.000	4.000
	2	2.000	4.000	5.000



Q. Does the bank have a plan to help the training function reinvent itself for the digital age?

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance
Q 10.13	1	20	20	0	2.600	0.285	1.273	1.621
	2	5	5	0	4.000	0.316	0.707	0.500

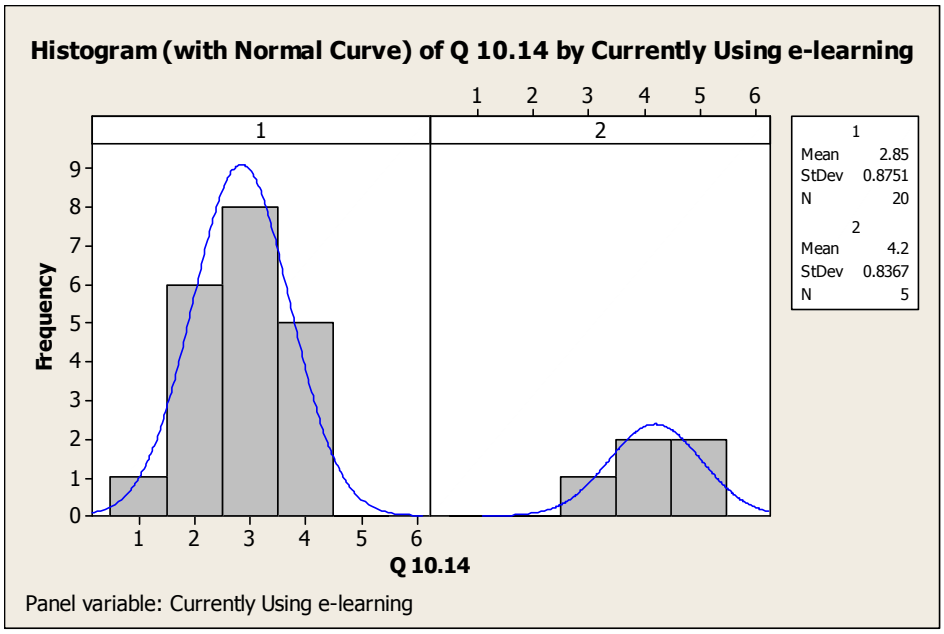
Variable	Currently Using e-learning	Minimum	Median	Maximum
Q 10.13	1	0.000000000	3.000	4.000
	2	3.000	4.000	5.000



Q. What is the climate in the bank to learning in alternative locations, especially the work site?

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q 10.14	1	20	20	0	2.850	0.196	0.875	0.766	1.000
	2	5	5	0	4.200	0.374	0.837	0.700	3.000

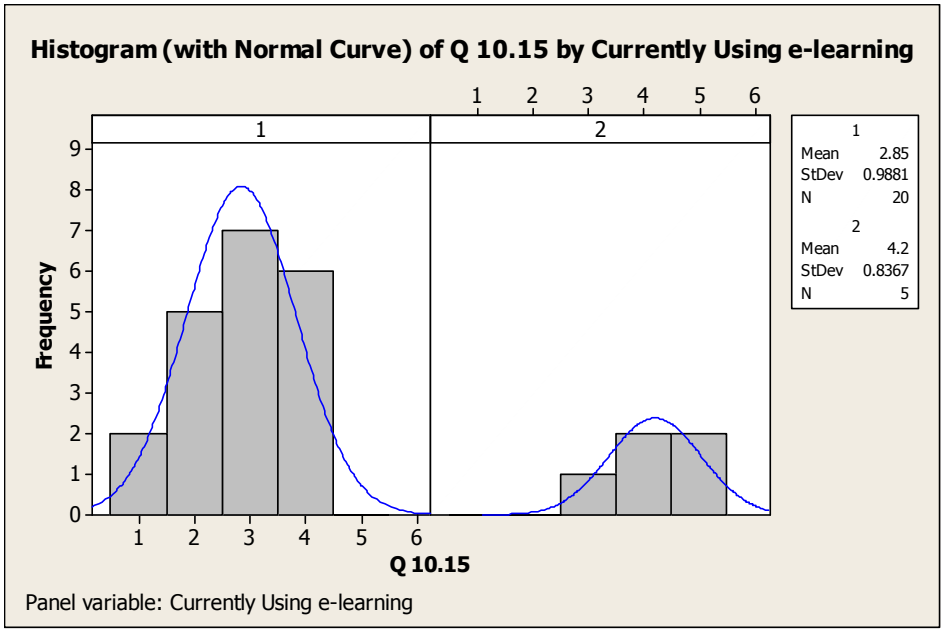
Variable	Currently Using e-learning	Median	Maximum
Q 10.14	1	3.000	4.000
	2	4.000	5.000



Q. Is the bank willing to allow e-learning to thrive, perhaps at the expense of some of the more traditional parts of the training organization?

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q 10.15	1	20	20	0	2.850	0.221	0.988	0.976	1.000
	2	5	5	0	4.200	0.374	0.837	0.700	3.000

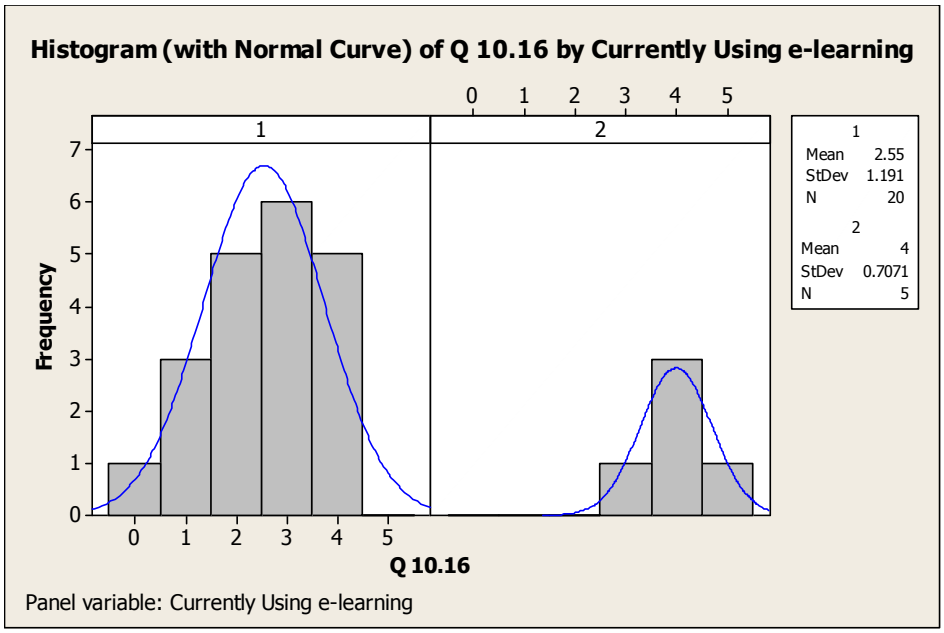
Variable	Currently Using e-learning	Median	Maximum
Q 10.15	1	3.000	4.000
	2	4.000	5.000



Q. How prepared is the bank to invest in, and incubate e-learning for several years in order to get it firmly established?

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance
Q 10.16	1	20	20	0	2.550	0.266	1.191	1.418
	2	5	5	0	4.000	0.316	0.707	0.500

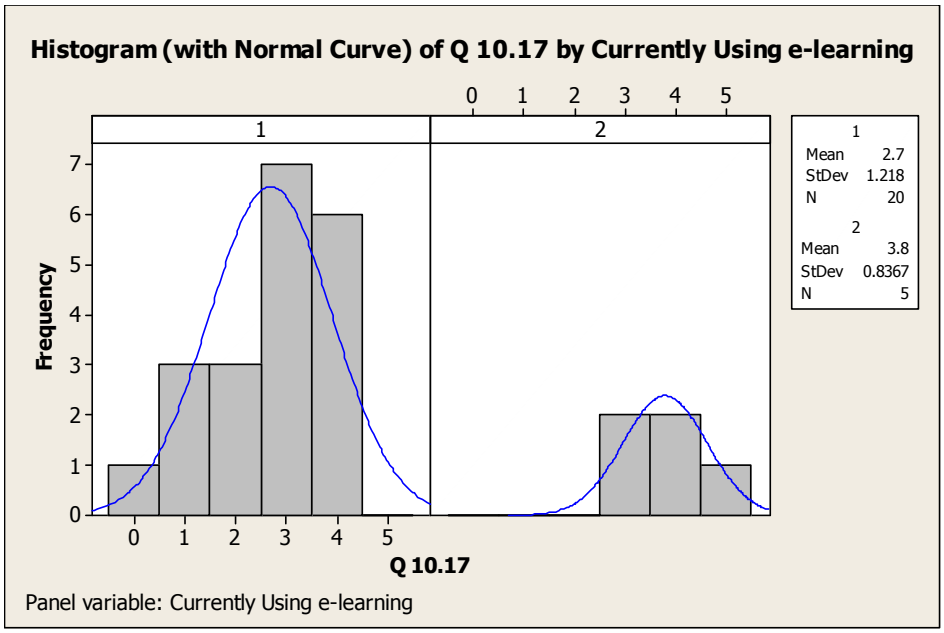
Variable	Currently Using e-learning	Minimum	Median	Maximum
Q 10.16	1	0.000000000	3.000	4.000
	2	3.000	4.000	5.000



Q. How prepared is the bank to deal with a large and increasingly complex e-learning marketplace?

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance
Q 10.17	1	20	20	0	2.700	0.272	1.218	1.484
	2	5	5	0	3.800	0.374	0.837	0.700

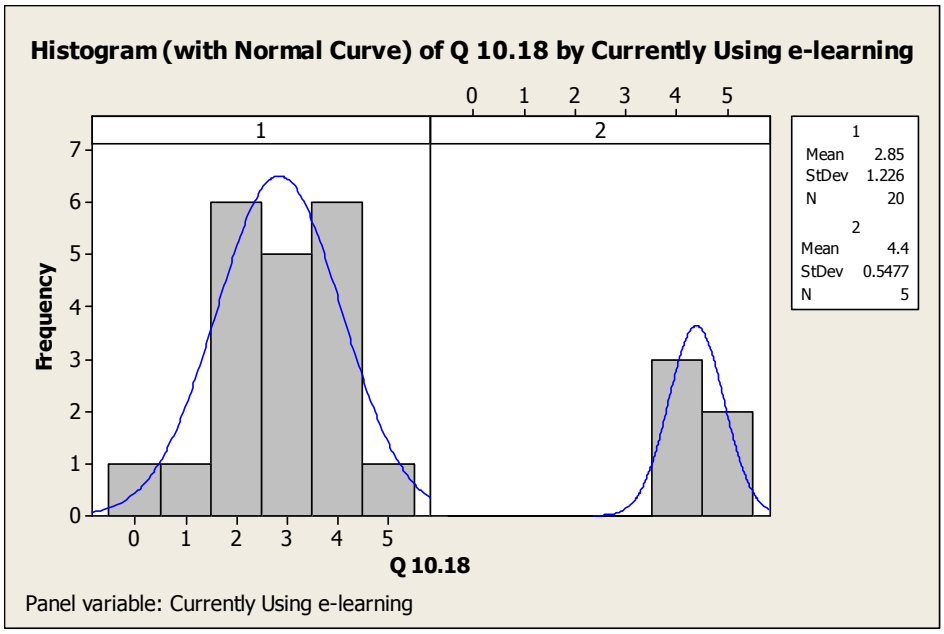
Variable	Currently Using e-learning	Minimum	Median	Maximum
Q 10.17	1	0.000000000	3.000	4.000
	2	3.000	4.000	5.000



Q. Does the bank have a good handle on what it is buying in the e-learning marketplace – can it differentiate quality products and weed out redundancies?

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance
Q 10.18	1	20	20	0	2.850	0.274	1.226	1.503
	2	5	5	0	4.400	0.245	0.548	0.300

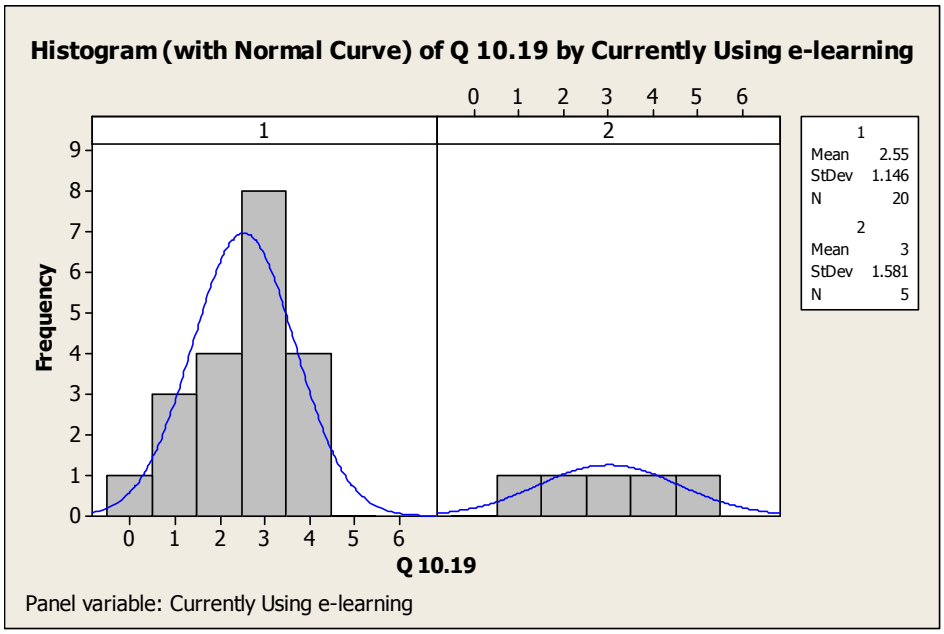
Variable	Currently Using e-learning	Minimum	Median	Maximum
Q 10.18	1	0.000000000	3.000	5.000
	2	4.000	4.000	5.000



Q. Is the bank prepared to outsource its training functions and manage them externally so that it can concentrate its resources on more valuable areas?

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance
Q 10.19	1	20	20	0	2.550	0.256	1.146	1.313
	2	5	5	0	3.000	0.707	1.581	2.500

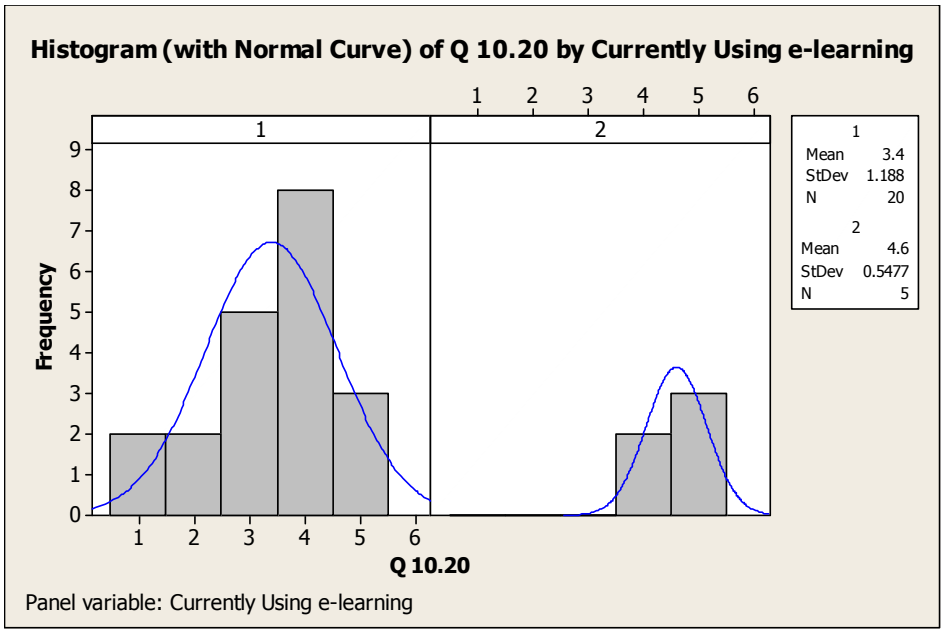
Variable	Currently Using e-learning	Minimum	Median	Maximum
Q 10.19	1	0.000000000	3.000	4.000
	2	1.000	3.000	5.000



Q. How committed are you, personally, to e-learning? Are you ready?

Variable	Currently Using e-learning	Total Count	N	N*	Mean	SE Mean	StDev	Variance	Minimum
Q 10.20	1	20	20	0	3.400	0.266	1.188	1.411	1.000
	2	5	5	0	4.600	0.245	0.548	0.300	4.000

Variable	Currently Using e-learning	Median	Maximum
Q 10.20	1	4.000	5.000
	2	5.000	5.000


Histogram (with Normal Curve) of Q 10.20 by Currently Using e-learning
1
2
Frequency
Q 10.20
1
Mean 3.4
StDev 1.188
N 20
2
Mean 4.6
StDev 0.5477
N 5
Panel variable: Currently Using e-learning