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New Era of Customer Relationship Management – Deliverance is the key

Swastik Padhi*, Amit Tripathy** and Naliniprava Tripathy***

ABSTRACT

Customer relationship management (CRM) is developing into a major element of corporate strategy for many organizations today. The primary aim of the CRM system is to automate and integrate the sales, marketing and support functions to enhance and nurture relationships with customers. CRM serves clients and customers, by putting together information from different sections of the business and presenting them in a cohesive manner. It enhances the quality and levels of customer service that ultimately leading to enhanced customer satisfaction, retention and loyalty.

Keywords: *Customer relations; customer retention; relationship marketing*

1. Introduction

The growth of service sector in the 20th century gave a new dimension to the upliftment of Indian economy. The Indian banking industry has been undergoing a metamorphosis since the commencement of liberalization, which indirectly provides different schemes for customers. The competition in the market has increased the need for banks to build and retain close relationships with their most profitable customers to generate new revenue for the bank. Financial service institutions like banks, insurance companies, and other service providers find it more useful to retain and reward the existing customers instead of running after new clients. It is established that building closer relationships with customers resulted in better returns to banks through the following means: increased use of banking services by loyal customers, changing of price premiums for customized services, and referrals by satisfied customers that brought new customers. Getting closer to clients and efficiently responding to their needs is a great way to boost their loyalty and encourage deeper business relationships. Customer Relationship

Management is revolutionizing the financial services industry.

Customer Relationship Management (CRM), broadly speaking is a process and procedure to interacting with customers and clients to develop a stronger relationship with them. CRM enables the organization in assimilating the information about customers, sales, marketing effectiveness, responsiveness, and market trends. This procedure is achieved with the integration of the people, process, and technology in business. The process enables the organization to understand the customers' needs and behaviors in a better way. In Information Technology (IT) industry terminology, it can also be termed as the collection of methodologies, technologies and software that help an enterprise to manage customer relationships in an efficient way. Lemon (2002) states that CRM is imperative to maintain customers; and forward-looking model is to be modeled for customer retention. Malhotra & Mukherjee (2003) indicate that effective, continuance and normative play vital

* Senior Client Service Executive, Operation Division, TTK Services Pvt. Ltd., a member of the TTK Group of companies, Bangalore, India. Email: swastyk@live.com

** Research Scholar, MBA Department, National Institute of Technology, Rourkela, India. Email: amittripathy08@gmail.com

*** Professor & Dean Research, Indian Institute of Management, Shillong, Meghalaya, 793 014, India. Email: naliniprava@yahoo.co.in/nt@iimshillong.in

role in service quality in banks to maintain a relationship with the customers. Their study concludes that effective commitment has a significant association with service quality in call centers.

Berry & Linoff (2003) reveal that CRM is centering more on customers' share of affluence than on market share for earning profit. Chen & Popovich (2003) advocate that CRM is a strategy to incorporate the business practices with technology to generate profits through pleasing customers' needs, wants, and maintaining a long-term relationship. Payne & Frow in 2005 identified five critical cross-functional CRM processes: a strategy development process, a value creation process, a multi-channel integration process, an information management process, and a performance assessment process for development and implementation of CRM strategies. Blery & Michalakopoulos (2006) suggest that the bank fully recognizes the value of CRM system for its development and success in the market. Kim & Kim in 2007 suggested using CRM scorecard as a performance measurement framework to diagnose and assess a firm's CRM practice. Sarlak & Fard in 2009 made a study to determine the increase of customer satisfaction through customer relationship management. The study finds that customer relationship management has a positive relationship with the customer satisfaction. Girdhar (2009) suggests that the external customers can be retained and satisfied by the banks provided the banks are satisfying the internal customers and building a good relationship with them. Renavikar & Joshi (2011) find that 65 per cent of the financial institutions are not able to get expected CRM technology benefit. The study concludes that firm size does not moderate these relationships.

The objective of CRM is one-to-one marketing and relationship marketing, responding to an

individual customer needs with an emphasis on improved customer retention through the efficient management of customer relationships. CRM can help achieve a company one or multiple advantages such as: (1) enabling the marketing departments of the business to identify and target best customers, and managing marketing campaigns that contribute to the sales team; (2) assisting the company to improve telesales, accounts, and sales management by sharing information with multiple employees; (3) enabling to maintain individualized relationships with customers to improve customer satisfaction that leads to maximizing profits, and identifying the most profitable customers to provide the highest level of services; and (4) providing information to employees for understanding and identifying customer needs to build effective relationships between the company, its customer base, and distribution partners.

Today, the concept of CRM creates customer delight. This is also applied to financial services sector, i.e., banking sector. In the banking field, a unique 'Relationship' exists between the customers and the bank. However, some banks are still to adapt CRM since banks have apprehensions like financial burdens, risk of failure, marketing inertia, etc. Keeping in view, the author has made an attempt that CRM can be adapted uniformly in the banking industry for betterment of banking services. CRM is not only a marketing technique but also a strategy to acquire, grow and retain profitable customers with a goal of creating a sustainable competitive advantage.

2. Objective of the Study

The objective of the study is to examine the importance of CRM in banking sector and its impact on the 'Customer Satisfaction' and customer retention. The paper also recommends some pertinent suggestions.

3. Discussions

3.1 Types of CRM

CRM can be classified into four types.

Operational CRM: The main idea behind operational CRM is effective interaction with customers. It refers to all those products and services that facilitate an organization to take care of their clients. To be effective, it must place the needs of its customers at top priority. Operational CRM performs the task of practical data analysis where the relevant customer data is collected and organized in an efficient way so as to reduce the cost and increase sales. Beside this, operational CRM also helps in providing media interface across all communication channels. Banks are the perfect examples of operational CRM where the customer interactions are studied to develop an effective customer contact management.

Analytical CRM: Analytical CRM helps in analysis of customer data to serve various purposes, the main objective being better ways to serve the customers. The whole idea is to design an efficient target marketing campaign where analytical CRM helps to answer a question like who are their best customers and how to retain them. It also contributes to developing strategies to attract new clients and ways to improve the profitability of customers. Analytical CRM can be used as a tool to serve purposes such as pricing related decisions, effective marketing campaigns, and new product development. Its forecasting ability based on customer data enhances the decision-making power of the organization regarding customer segmentation. Few examples of analytical CRM are data warehousing, online analytical processing (OLAP), and data mining systems.

Collaborative CRM: Collaborative CRM is an effective way of communication between the organization and their key customers. The

key motive behind collaborative CRM is to enhance the quality and levels of customer service being offered which increase customer satisfaction, retention, and loyalty. It covers direct interaction with clients including feedback and issue reporting. Collaborative CRM includes the function of billing, invoicing, planning, marketing, advertising and maintenance. All the functions are integrated to achieve one common goal that is improving the quality of customer service. In the present day, social media has added a new dimension to Collaborative CRM. Its advantages are multi-dimensional whereby it has not only increased customer segmentation on various scales but has also helped organizations to gain customer attention and build brand awareness.

Interactive CRM: Today's business has become more global, and the Internet has become a prime medium of interaction between clients and organizations where immediate information access is highly desired. Interactive CRM is the solution where various applications and processes are combined to manage customer interactions through the web. Interactive CRM covers the functions of real-time web-based chat, multimedia content streaming, wireless CRM, encrypted chat, and integration with the customer database. Few other features include multiple language translation feature, self-service FAQ management, service request emails and much another technical support system.

3.2 History of CRM

Early stage: CRM first appeared as a form of Customer Information System (CIS) in the 1980s pioneered by Robert and Kate Kestnbaum. The first generation applications were at the helpdesk, sales, and marketing department, or a particular function within a call center. Then it shaped to Contact Management, Sales Force Automation (SFA), Call Center and Customer Contact Center

(CCC). In 1986, contact management software was developed which was helpful in efficient storage and organization of contact information of clients. By the end of the decade, service/client architecture was introduced which held the promises of high growth rate of customers.

Advances in the 1990's:

The beginning of 1990's marked the evolution of contact management software leading to sales force automation which provided companies much more useful customer information. It had the features of database marketing, inventory control and automated customer order tracking. By the end of 1995, the acronym CRM was coined. The last half of the decade saw the development of ERP (entity resource planning) applications in the field of CRM which now could be used as a way of improving customer service as well as increasing the sales.

True CRM comes of age:

True CRM began in the early years of the 20th century where the thinking was to transform the static database into a dynamic process so as to understand the customer needs continuously. The transformation of CRM industry came in 2007 as now it is possible to have a cloud based CRM. The Internet provided new possibilities, and soon social CRM took off as organizations shifted their focus from transaction to more on interaction. Today, mobile CRM solutions and Software-as-a-Service (SaaS) have gained popularity as it can be easily integrated with mobile devices. CRM relies on customer service and technology, and its application can be seen in sectors like financial services, high-tech companies, and the telecommunications industry.

3.3 Trends in CRM

There has been a radical change in the ways of delivering customer services today. Old ways

of advertising and customer services are no more desired. With the innovation of the internet and social media, new trends of automated CRM have been established as follows:

- **Improving distribution and channel management**
Flexibility is one of prime concern for CRM users. Today banks have multiple channels to deliver their products and services. Service centers, the internet or mobile all platforms must provide services to customers at the lowest cost so that a long term customer relationship can be built. Besides, these channels must be flexible, accessible, and fully integrated so as to meet the client needs.
- **Increasing the profitability of customer relationships**
Profits can be improved by keeping an eye on both production and sales. Improving production scale while reducing service costs can boost profitability. Target marketing strategy with customized and personal selling will surely help the cause. On the cost side, CRM automation, integration, and improved channel management will increase efficiency and reduce cost.
- **Increasing acquisition of new customers**
CRM applications help to analyze customer data so that a target customer group, based on their value, can be created. Then customized services are to be provided so that the customer base can be expanded. In short CRM is all about the right services to the right customers at the right time and cost.
- **Improving retention of existing customers**
Customer satisfaction is the sole purpose of CRM. As customer loyalty is directly

related to customer's satisfaction, improving both pre-sale and post-sale services along with personal interactions can help retention of existing customers.

- **Social CRM**

Social media has become an integral component in handling customers. It has a two-way role, first it helps in social media marketing and secondly to address the client feedback. It provides a complete solution for customer interaction and keeps the customers engaged with the brand.

3.4 Current Focus of CRM

CRM is the major tool to get the competitive advantage in the challenging marketing environment. CRM focuses on specific market segment where organizations can demonstrate

distinctive competence and in which they can create sustainable competitive advantage.

Customers are now demanding multiple channels through which they can interact with their providers including face-to-face contact, phone, website, e-mail, mobile device, etc. This has forced banking sector to explore new distribution channels, so that ordinary customer has more information about multiple banking products than even before. This is aimed not only to present the customers from taking their business elsewhere but also to ensure that they are offered the products and services that are most appropriate and most likely to result in new revenue for the bank. There is a phenomenal change and paradigm shift towards customer focus over the past five decades, which is depicted in Table 1 and Table 2.

Table 1: Customers focus over the decades

Decade	Focus on Customer
1950 – 1960	Serving the customer
1960 – 1980	Satisfying the customer
1980 – 1990	Pleasing the customer
1990 – 2000	Delighting the customer
2000 and beyond	Retaining the customer

Table 2: Paradigm shift – Scenario in India

Before 1991	After 1991
Seller's market	Buyer's market
Protected markets	Open market
Not many global brands	Increase in number of global brands
Friendly competition	Cut-throat competition
Patient customers	Demanding customers

Non-awareness customers	Awareness customers
Limited choice for customers	Multiple choice for customers
Limited media promotion	Extensive media promotion
Cost plus pricing	Competitive price cutting
Limited customer services	Increase customer services
IT – Competitive advantage	IT – enabler
Focus on new customer	Focus on new customer as well as retaining existing customer
Monologue	Dialogue
Transactional Banking	Relationship banking
Product orientation	Orientation to product innovation
Short time scale	Long time scale
Little customer commitment	High customer commitment
Moderate customer contact	High customer contact
Quality is primarily the concern of a few	Quality is the concern of all

3.5 CRM in Banking

According to Stone et al. (2002), most sectors of the financial services industry are trying to use CRM techniques to achieve a variety of outcomes. In recent years, banks have moved forward and preferred implementation of relationship banking principles. The reason for adopting marketing principles was the competitive pressure that arose from the deregulation of the financial services market particularly in India. This led to the retail banking market to increased competition and led to a blurring of boundaries in many traditional product markets (Durkin, 2004). CRM is helping the bank to use technology and human resources to understand the behavior of customers to provide value-added services to their clients. If CRM works well, a business not only provides better customer service but

also sells products more efficiently, helps sales staff close deals faster, simplifies marketing and sales processes but also discovers new customers and increases customer revenues. For CRM to be truly effective, an organization must decide what kind of information customer is looking for and what it intends to do with that information. Analysts can obtain a holistic view of each client and pinpoint areas where better services are provided.

For implementing CRM in the banking, it requires collecting and reviewing the most relevant customer data. Relevant customer data can reveal needed information about behavior patterns and attitudes of the customers. Once these data are identified, it can be included into the infrastructure so that effective marketing

plans can be developed. After proper customer data analysis and marketing plan development, the multi-channel customer contact strategies can be implemented within the CRM technology infrastructure. In addition to it, the following strategy is required to be taken:

- Simplifying marketing and sales process
- Making call centers more efficient
- Providing better customer service
- Discovering new customers and increasing customer revenue
- Crossing sell products more effectively

The CRM processes should fully support the necessary steps of customer life cycle. The basic steps are:

- Attracting present and new customers
- Acquiring new customers
- Serving the customers
- Retaining the customers

3.6 Selection of the Right CRM Technology

Till date, no single CRM software or formula is evolved to give instant success to all banks. For small or medium banks, the requirement is different from big banks. Most CRM packages provide excellent sales force automation, but not equally good integration with computer telephony, or with the web. These are adequate for local and regional banks but not for large banks. A mix of different software is likely to link the databases, data warehousing software, contact management software, and a CRM package for helping to upgrade the small banks.

Apart from this, other internet enabled applications are available such as enterprise resource planning packages, e-commerce applications, relationship management packages and enterprise portal applications to upgrade the small banks. One can adopt the best practices to slash costs, and introduce efficiencies into the supply chain and internal

operations. Today the global market for CRM services and solutions is currently worth \$148 billion. This proves to show the numerous choices available in this field.

3.7 Need of CRM in Banking

The banking sector in India has been witnessing remarkable changes in post-liberalization. The significant changes happening in banking industry's portfolio are due to competition, consolidation and information technology. The bank needs to be more customer-centric. Banks can improve profitability by adopting strategies like market segmentation, innovation, price bundling, and relationship. Technology is playing a significant role in retail banking, but its role is complementary to customer service initiatives. CRM is a strategic initiative that impacts all areas of an organization. According to CRM software firm, banks need to be aware of three major problems:

Measuring CRM benefits:

A basic CRM challenge is to establish the measurement method. It is a difficult task for the bank to determine whether the investment is a success or not, because the fact is that the metrics that are used to justify a significant IT investment are not always the most appropriate for evaluating an ongoing success. When banks seek to justify the cost of their investment in CRM-related technology they usually focus on data, i.e., the numbers that they already have, typically those related to decreased costs and increased sales. In other words, they look to justify the top-line expenses with bottom-line benefits.

Customer profitability:

Many banks are using profitability as an essential component matrix to deal with their clients. But measuring profit in a bank is a

difficult task. Many banks allow accountant's approach to measuring the process. However, accounting and finance people are in charge of the process, but make accurate allocations of funds that do not accurately reflect the activities which they are intended to measure.

80-20 rule:

Critical pricing decisions of most banks are based on the so-called 80-20 rule. It means 80 percent of profits are derived from 20 percent of customers. However, the use of inaccurate cost information on customer buying behavior makes this rule difficult to apply.

3.8 Benefits of CRM in Banking

A CRM is a comprehensive strategy for the banks to create brand value and identify customers' needs by providing targeted, timely and relevant information. This can indeed add value to their clients. CRM systems provide tools that can help to deliver the right service at the right time by dynamic customer information. This enables them to track and build healthy relationships with profitable customers and identify specific products and services that can benefit customers. CRM dashboards are acting as business decision support systems that are unified place to current measurements and outcomes.

The following benefits are available to organizations/banks by adopting CRM processes:

- Develop better communication channels
- Collect customer related data
- Create detailed profiles of individual customers
- Increase customer satisfaction
- Access to customer account history, order information, and customer information at all touch points
- Identify new selling opportunities

- Increase market share and profit margin
- Increase revenues
- More efficient reach and marketing
- Improve customer service and support
- Improve response time to customer requests for information
- Enhance customer loyalty
- Improve ability to meet customer requirements
- Improve quality communication and networking
- Reduce costs of buying and using product and services
- Better stand against global competition

3.9 Measuring the Return on Investment of CRM

Measurement is an important part of CRM but it is hard to measure as many factors have an effect on profits of CRM. Regarding financial factors, all businesses are concerned about their overhead cost. Thus, RoI (Return on Investment) calculations give a picture of the relevance of investment made in CRM applications. Measurement of RoI begins with historical data of all the costs associated with the implementation of CRM. Most of the expenses are either capital expenses such as purchasing of CRM software, building the database, training costs, and maintenance costs or operating expenses such as research, advertising, and channel management. Once the factors are decided, one needs to select specific metrics for measurement. By comparing these performance metrics before and after implementation of CRM, a clear idea of the actual benefits of CRM can be understood.

Step 1: Analyzing hard and soft benefits

Identifying the benefits of CRM is important. CRM offers three financial benefits that have an impact on profitability, i.e., increased revenues, reduced costs, and higher customer

satisfaction. The first two come under active benefits category and are easier to measure while the third belongs to liberal benefits group and is rather difficult to measure.

Step 2: Assessing costs

The initial cost outlay for implementing CRM is the expenses made for technology including hardware, software, and networks. But the most important cost consideration is the cost per lead, i.e., the amount of money spent to acquire new customers. It includes all costs made by both sales and marketing department that contributed to sales. Another cost outlays include people and process costs that lead to an increase in sales.

Step 3: Realistic time frame

The period within which the anticipated results are to be received must be realistic and practical. The first step is to assess when the returns are expected. The best way to do this matches the CRM application modules implemented in a particular time frame to the anticipated benefits to determine best the timeliness of returns. It is easier to impact the organization's productivity than the satisfaction of customer base quickly.

Step 4: “No-Change” scenario

A benchmark is always set to compare the RoI results. Determination of this baseline depends on various factors such as people, process, system and networks. If the computed RoI falls short of the benchmark, the benefits reaped from CRM is to be re-evaluated for improvements or increases. Changes to RoI are to be evaluated over the time it expects to take to obtain the returns of CRM.

Step 5: Calculating RoI on CRM

All the benefits reaped from CRM and all the

overhead costs are expressed in monetary terms so that the RoI measurement can be applied. The simple formula for RoI calculation is:

$$\text{Simple ROI} = (\text{Gain from Investment} - \text{Cost of Investment}) / (\text{Cost of Investment})$$

The tricky part is to forecast the benefits and costs that the company anticipated over the time span. Thus, certain guidelines are to be followed to overcome these difficulties:

- Include all sale representatives
- Compute a range of estimates (high and low)
- Assign suitable weights to anticipated outcomes based on probabilities
- Try to develop the best technique suitable for ROI measurement

Step 6: Comparison with status quo

A comparison is made between the RoI for the status quo and the new CRM initiative. If the result is positive and promises incremental returns, the CRM initiative should be implemented. This is the method of straightforward traditional financial analysis.

Step 7: Ensuring returns

At this point, the bank can have an idea of what savings can be expected shortly. The top management must make sure that the anticipated returns must be converted to actual returns. It must take all necessary steps to have a clear stream of revenues.

3.10 The Challenges CRM Solves

Today, CRM is implemented as the front end to their information systems. CRM information acts as a master record integrated with other information systems to process data and provide timely relevant information to the

CRM system for customer facing activities such as marketing, sales and customer support.

Bank customers are having more choices now; customers are prepared to walk away from their bank if their expectations are not met. The following challenges are faced by banks today:

Evolving customer profiles:

It is essential to implement processes for managing web landing pages and site visitors. The employees can automate new lead records, sorted and assigned for further action with the help of CRM. The CRM can also score, track, and update customer profiles.

Connecting the dots:

All kinds of management of individualized services, marketing initiatives and pricing strategies are streamlined and organized by CRM. Most CRM systems currently include social media listening tools to track and respond to social media sentiment in real-time. CRM-based customer service modules can provide traditional customer service, and it can be further enhanced by providing a complete picture of customer interactions.

Responding appropriately:

Any service industry is giving high priority to deal with troubleshooting customer problems. A CRM helps them by providing timely and discretionary decision support information to management, front line staff and other resources for creating new opportunities for conversions to be realized.

Improving the customer experience:

Today, the customer experience and service delivery are more important than ever. At the heart of the client experience is the quality of service provided. The quality of service

provided to clients is important today. Service quality will be better if it matches with customer's need.

Increasing sales:

To attract new customers and retain existing customers, it is required to make the sales environment more comfortable and relaxed. Customers should feel welcomed and experience a higher service level. It is important for any organization to promote the optimal conditions for a positive customer experience that enhances the chances of the customer buying product or service. For example, a client is more likely to have confidence and inspired by a staff member who seems to already understand the customer's requirements before they meet. In this circumstance, the organization should give the opportunity to the staff to access to the client's "history" to prepare themselves in advance. This is essential to deliver a seamless and personalized customer journey in an Omni-channel context.

Reducing cost/improving efficiency:

Identifying ways to improve efficiency and cut costs without compromising the quality of service is a challenge for many financial institutions/ organizations today. To better manage the customer journey, it is possible to streamline the client flow chart. To reduce transaction time, it is necessary to inform the employee about the clients' requirements before they reach the counter. This enables employee to meet the needs of customers accordingly to provide satisfactory service.

Increase employee satisfaction:

Being able to attract and keep qualified employees in the organizations, A Customer Journey Management is required to implement. Customer Journey Management increases

employee satisfaction by streamlining the customer flow chart and making them more efficient. It also creates a sense of professionalism. It helps to engage employee's competence with the client's need. Employees feel comfortable that they are informed and ready to meet the customer's requirements and provide the best possible service. Also, employees should be supported by real time monitoring and resource planning to reach the service level targets.

Driving business improvements through data and analytics:

The biggest challenges are for continuous evolution and space for improvement. It is important to use tools to determine and analyze customer throughput per hour, waiting and transaction time per customer and cost per transaction. It will boost management to focus on areas with high improvement potential and initiate the right operational improvement activities. It is also equally important to collect data on service delivery outcome and immediately inform to employees of an organization to make them more efficient and improve the quality of service.

4. Conclusion

Today, in the banking and financial services industry, the customer is empowered with choice. A CRM system is a sound business strategy for banks to help create brand value and identify and understand customers' needs by providing targeted, timely and relevant information that can add value to their clients. Financial services, like other business sectors, must consider performance enhancement initiatives that drive customer retention and lead conversion to their brand and services. Performance is fueled by relevant and accessible information that can be quickly acted upon from systems that provide and support excellent customer service with the

ability to track, measure and analyze customer interactions. Indian banking industry should aim to formulate strategies incorporating people, process and technology issues.

The real challenge for the future lies in anticipating the demands of the new age and providing sustainable solutions. CRM strategy must cover all the market segments such as retail customer's Indian corporate sector, trade and agricultural sector for banking requirements. The banks must adopt e-CRM 'Customer-centric' focus approach, as it is believed that products should be devised for the customers. CRM is essential to compete effectively in today's marketplace. The more effectively the services industries use information about customers to meet their needs the more profitable the industry will be. Operational CRM with the help of analytical CRM provides the business a cutting edge to maintain and enhance relationship in the competitive world.

With the proper vision, strategy, and infrastructure, banks can target their most profitable customers and use real-time insight about those customers and efficient communication systems to build long-term and profitable relationships. They can enhance those relationships by developing portfolios of financial products and services that are innovative and responsive to customer demands and by delivering a consistent and personalized experience across every interaction channel. The shift from report-based to metric-based intelligence, combined with alerts and management by exception, can make decision making proactive rather than reactive. A greater focus on CRM is the only way the banking industry can protect its market share and boost growth. Service organizations are now realizing that accurate and complete customer data segmentation will be able to provide multi-channel approaches to the specific customer to retain them thereby

generating revenue for the organization. It appears from the study that future of CRM is very bright. CRM would also make world-wide bankers to realize that the purpose of their business is to "create and keep a customer" and to "view the entire business process as consisting of a tightly integrated effort to discover, create, and satisfy customer needs."

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Augmented Reality and the Future of Marketing in Armenia

S. A. Movsisyan*

ABSTRACT

Global virtual and augmented reality market will reach \$108 billion by 2021 and AR will be the main contributor with \$83 billion (with largest contribution of Mobile AR); followed by VR market of \$25 billion. Augmented reality will mature in longer timeframe and at larger extent as is opposed to virtual reality. The Armenian augmented and virtual reality market is in an initial phase and the biggest player: X-Tech, as of 2016, created 15 virtual reality applications and three more were under development. First time in the Republic of Armenia, this study analyzes the possibilities of developing and implementing augmented reality marketing applications for the promotion of various goods and services. These applications have been successfully tested in Proshyan Brandy Factory LLC and Yerevan Beer CJSC and are consistent with all Android devices running on versions 2.3.1 Gingerbread (API level 9) and above. The CEO's of the aforementioned companies expressed their willingness to invest ProshyanAR and YerevanBeerAR applications in their stores and museum.

Keywords: *Augmented reality; virtual reality; marketing; digitalization; mixed reality*

1. Introduction

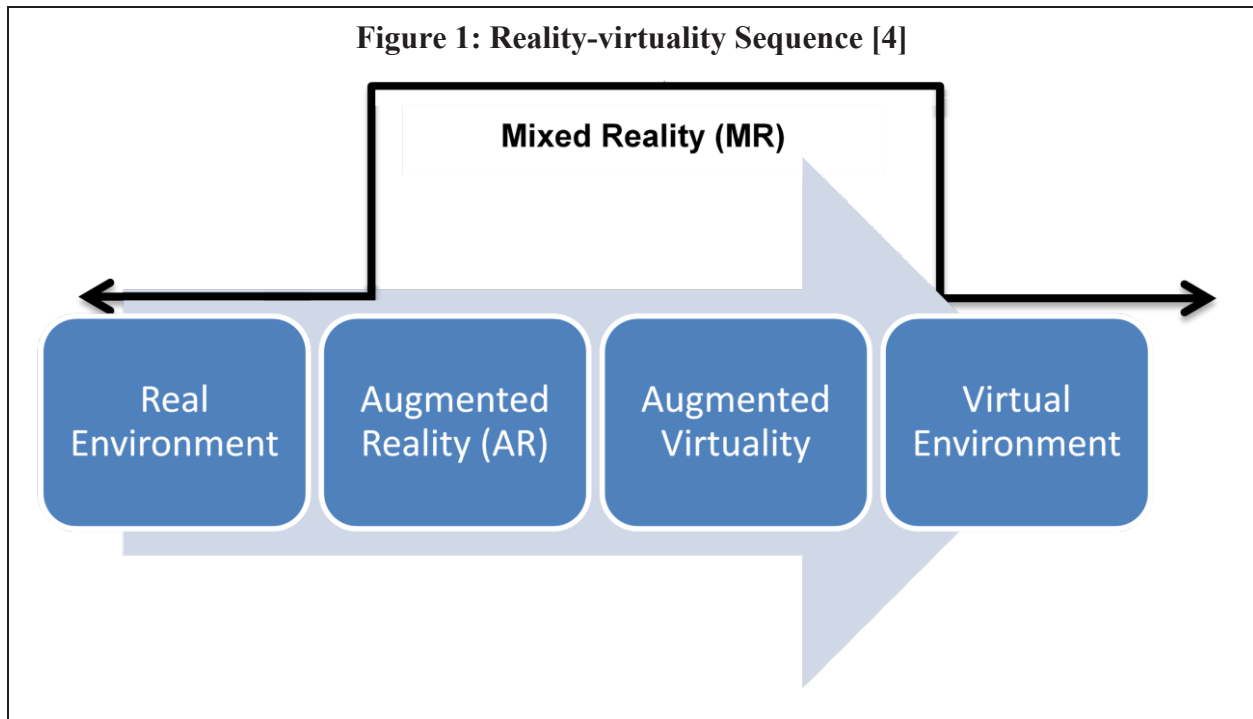
The applications of augmented reality (AR) have been drawing attention during recent two decades. AR was first applied in pilots training application in 1990s [1]. Azuma defined AR, as not only being restricted to the technical hardware but also bringing the real and virtual items together in a real environment. In addition, it records the real and virtual objects together and then runs jointly in real time in three dimensions. Horizon 2011 report stated that AR along with its 3D solutions introduces new ways of interaction, therefore, should be implemented in the upcoming 2-3 years for innovative teaching, learning, research, or creative inquiry. AR overlays virtual objects or

information on physical objects or environments, creating mixed reality and coexistence of virtual objects and real environments, which results in augmented learning experiences [2, 3].

Augmented reality (AR) directly or indirectly interacts with new information, therefore, enhances the physical real-world environment through virtual computer-generated information [4,5].

Milgram and Kishino considered AR as a portion of the overall subject area of mixed reality (Figure 1) [6].

* National Agrarian University of Armenia, Republic of Armenia. E-mail: suren@movsisyan.dk



2. Global Augmented and Virtual Reality Market

The Digi Capital's Augmented/Virtual Reality Report 2017 indicates that the VR/AR market will reach \$108 billion by 2021 and AR will be the key driver with total of \$83 billion (largest contribution of Mobile AR); followed by VR market of \$25 billion. Augmented reality will be implemented in longer timeframe and at larger extent as is opposed to virtual reality. The following five major obstacles hinder the mass adoption of AR:

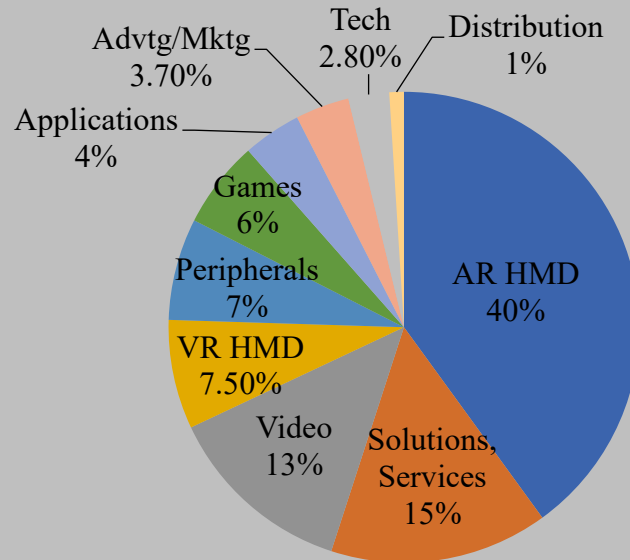
1. High quality device
2. 24h battery support
3. Mobile broadband
4. Favourable infrastructure for AR App development
5. Cross-subsidization in telecommunications

Although major efforts are directed towards solution of design, quality, 24h battery support

and mobile broadband, nevertheless, the favourable infrastructure for AR App development and cross-subsidization in telecommunications are difficult issues to tackle.

The VR/AR industry mainly consists of large-cap IT companies and venture/startup companies. In 2016 VCs and corporations invested \$2.3billion into virtual and augmented reality startups, exceeding the \$700 million investment in 2015 by more than thrice. The latter is a great achievement especially for such an early stage market. The largest shares of investment in 2016 were distributed among AR/VR hardware development (40 percent), AR/VR solutions and services (15 percent), AR/VR video (13 percent), VR HMD (7.5 percent) [Fig. 2].

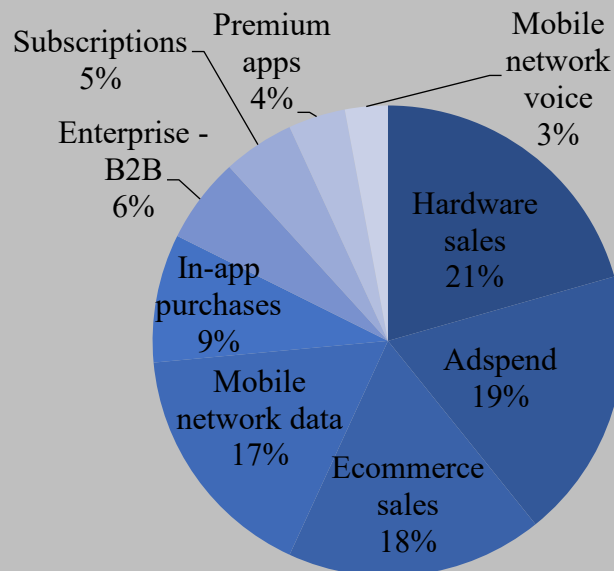
Figure 2: Augmented and Virtual Reality Industry Investments in 2016 [7]



The largest AR/VR investors were Warner Bros, Alibaba, Google, Qualcomm, Fidelity, Morgan Stanley, J.P. Morgan, T. Rowe Price, CIC, Wellington, Amazon, Fidelity, CITIC, Intel, NetEase, 21st Century Fox, MGM, Softbank, Lenovo, Comcast, Samsung, Tencent, HTC, etc.

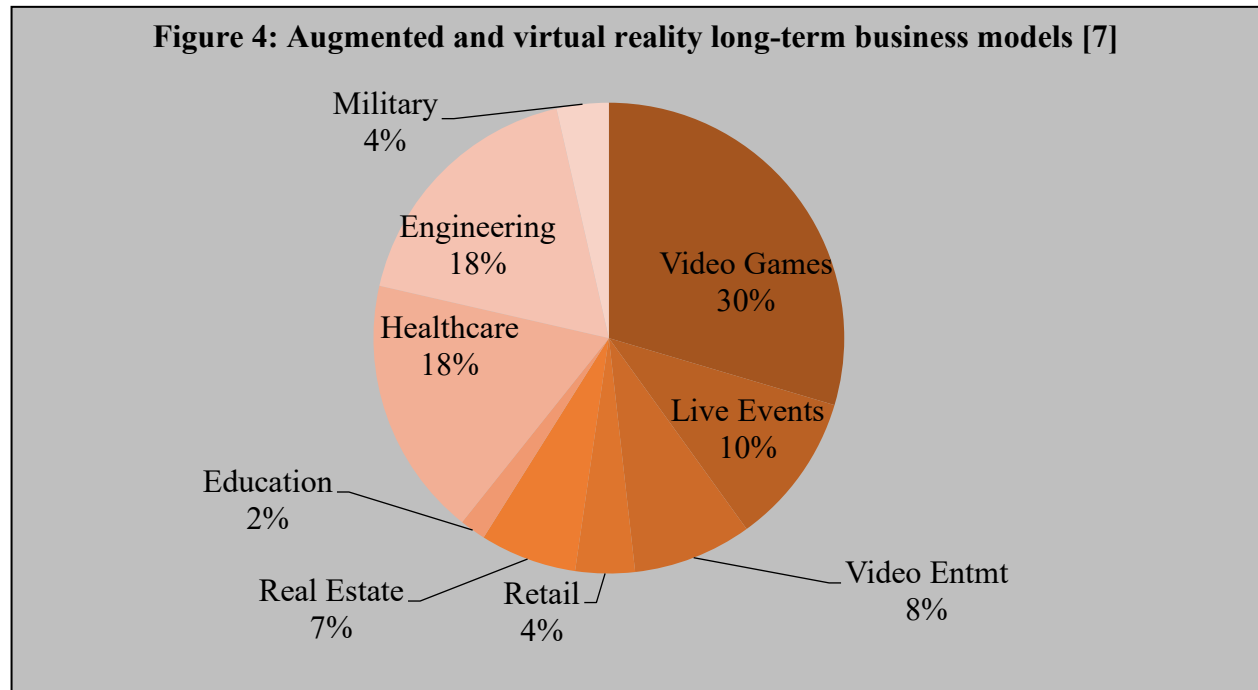
The hardware sales, adspend, ecommerce sales and mobile network data amounted to 75 percent of total AR/VR revenue in 2016 [Fig. 3].

Figure 3: Augmented and Virtual Reality Long-term Business Models [8]



According to projections of Digi Capital, in 2025 the AR/VR revenue will reach \$39.2 billion and the main drivers will be video

games (30 percent), engineering (18 percent), healthcare (18 percent) and live events (10 percent) [Fig. 4].



3. Worldwide Implications of Augmented Reality Applications

The implications of augmented reality applications enlarge with plausible results in alcoholic beverage, healthcare, business and education sectors. According to Canadean's latest research, 35 percent of consumers worldwide consider food pairing as a key factor while choosing alcoholic drinks. Meantime, this behavior is more predominant among older adults as is opposed to youngsters, as the figure rises to 43 percent of those aged 55 and over, but decreases to 26 percent for 18-24 year-olds. Therefore, social media and augmented reality applications will be decisive tools in attracting youngsters towards food and drink pairing. The latter will play a significant role in growing volumes of wine, beer, and spirits consumption. Brands need to advertise on Instagram and Snapchat and even beverage and consumer dedicated apps promoting food and beverage pairing, or targeting functionality like

near-field communication (NFC) and augmented reality. A practical example can be the Johnnie Walker's intelligent label with NFC technology sending food and drink pairing suggestions to shoppers' phones [9]. The smart bottle had printed sensor tags with Near Field Communication (NFC), which turned every Johnnie Walker Blue Label bottle into a smart bottle that encoded digital information accessible through consumers' NFC-enabled smartphone [10].

In 2015, Belgium-based "Martens Brouwerij" created a new beer brand ("Dagschotel") using digitally printed polyethylene terephthalate (PET) bottles featured the faces of several Belgian TV actors. When the application is activated, the characters illustrate special performances on the smartphone. In addition, whenever two bottles are brought together, the

application activates the effect of talking bottles in the form of a dialogue between the characters [11]. Augmented reality enables companies to foster unique campaigns and promote their beverages. The traditional marketing campaigns worked mainly for business, while augmented reality campaigns benefit both the business and the consumer. On the one hand, AR campaigns generate attraction around a product, possibly leading to higher sales; on the other hand, provide interesting and useful information to customers.

4. Armenia's Augmented Reality Market Overview

AR offers endless opportunities for Armenian businesses to engage more customers, add additional value and bring more revenue by transforming conventional marketing channels. A well-implemented planning and execution would enrich traditional methods of operations and contribute towards brand loyalty. The highly competitive and evolving food and beverage industry of Armenia requires innovation to be differentiated from the competitors.

The Armenian X-Tech company has recently been actively promoting these technologies in Armenia by developing various applications in alignment with international market trends and developments. As of 2016, the company has already created 15 virtual reality applications and three more were under development.

In 2016 Ministry of Culture of the Republic of Armenia has presented a new mobile application (i.e., "ArmCulture AR" application developed by ARLOOPA and Aurora Baréalisse Marketing companies) enabling to see the 3D animation show of monuments, which was accompanied by voice message. The ArmCulture AR users can access the 3D animations of Hovhannes Tumanyan and

Alexander Spendiaryan monuments on Yerevan's Freedom Square [12].

The Toumanian Museum AR/VR application was developed in partnership with Hovhannes Toumanian Museum located in Armenia (named after Armenian famous writer Hovhannes Toumanian). The application renders 3D virtual animation of David of Sassoun and the augmented illustration of Hovhannes Toumanian's wife Olga. The virtual reality side of the application represents digital 3D scenery of Lori region of Armenia [13]. Accessing this application through Cardboard provides immersion into the nature of Lori region [14].

ARLOOPA Inc. recently started the production of "ARLOOPA VR" virtual reality glasses (including Bluetooth remote control), priced at 40 USD [15], enabling to watch 360 degrees movies and videos, play virtual reality games, and access virtual reality applications [16].

5. Objectives of the Study

The objectives of the study are as follows:

- i. To create multipurpose augmented reality applications and integrate with 2D and 3D video and image animations.
- ii. To render augmented reality applications on literally any object.
- iii. To identify the possibilities of implementing augmented reality marketing applications for promotion of various goods and services.

6. Methodology

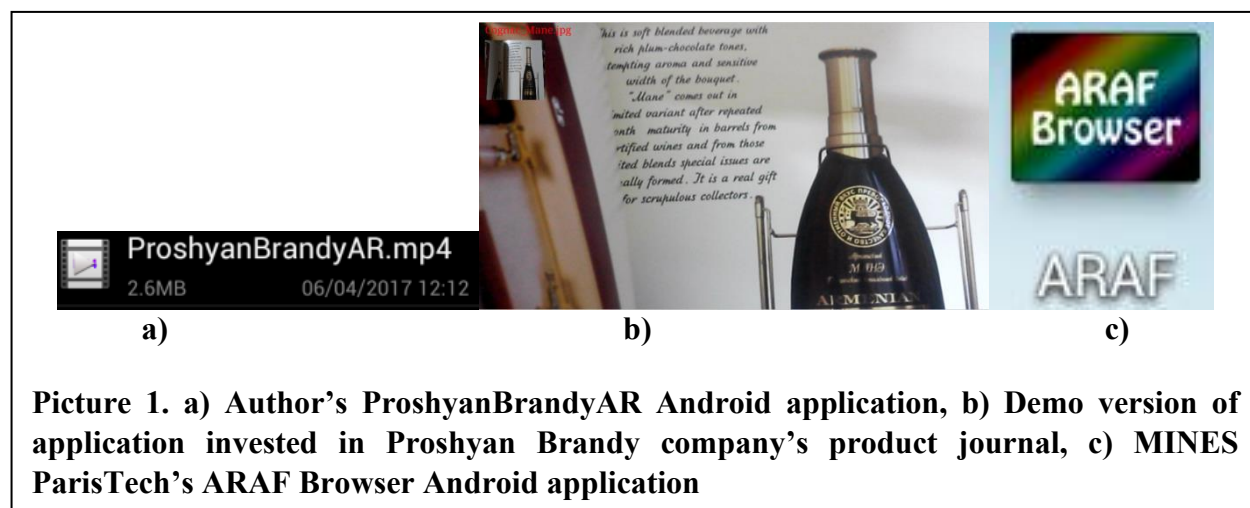
The author has used Vuforia, Unity and Blender 3D software, JavaScript, ARAF and C# programming languages and created ProshyanBrandyAR (mp4 format Android file decoded through MINES ParisTech's ARAF Browser Android application [17]), ProshyanAR, YerevanBeer AR augmented

reality Android applications (with integrated 3D animation, video and audio effects) for advertising Proshyan brandy, wine, Vodka and Kilikia beer.

7. Results and Discussions

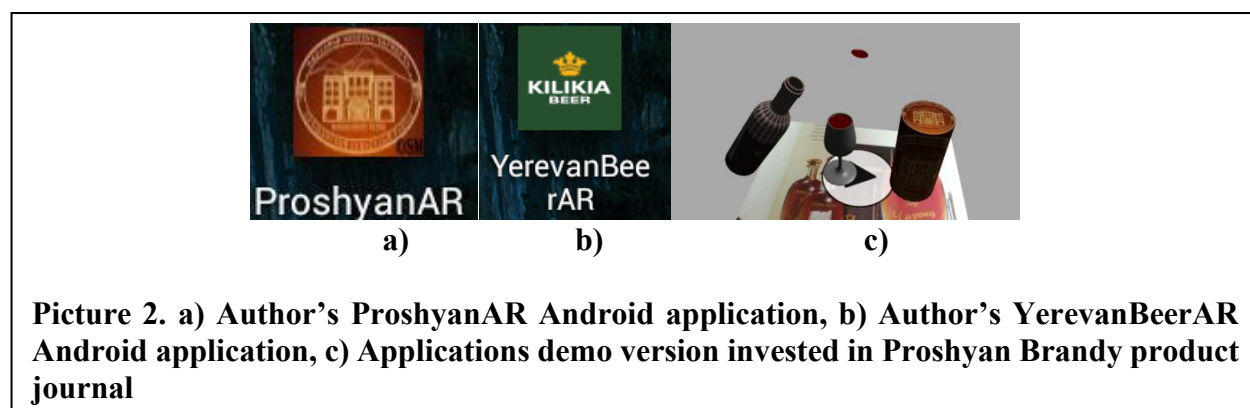
The multipurpose applications with built-in 2D

and 3D videos, image animations with possibility to be rendered on literally any object have been successfully developed by author and tested on Proshyan brandy factory's and Yerevan Beer company's product journals [Pictures 1, 2].



The CEO's of Proshyan Brandy and Yerevan Beer companies expressed their willingness to invest the aforementioned Android applications in their stores and museum. These

applications are compatible with all Android devices running on versions 2.3.1 Gingerbread (API level 9) and above.



8. Conclusion

Augmented reality offers immense opportunities for various aspects of daily lifestyle of the people. Most specifically,

augmented reality books rendering 3D and 2D audio and video objects can be used to enhance the students' practical knowledge in learning

mechanical components while pursuing mechanical engineering degree. Meantime, the image-based recognition and interaction techniques of AR books will delight and engage children in learning various subjects. In addition, the manufacturers of products and services can use AR rendering to enhance the customer interaction and retention; the latter will result in increased sales. Another ideal implication of AR mobile applications is found in coupons' promotion, since the latter will enable to quickly access good local deals directly from the mobile device.

The manufacturers and distributors of goods can invest AR applications in their museums, specialized stores, trade and entertainment centers, supermarkets, restaurants enabling the customers to scan the goods through smartphones and get valuable information on complementary goods, product rankings and buyers' reviews. Consequently, buyers will be able to more efficiently compare and evaluate the qualitative indicators of various goods.

Packaging can be efficiently incorporated with augmented reality. In other words, product labels can be augmented to 'come alive' while scanned with a smartphone. Scanning the augmented bottles can take customers on a 3D tour of the vineyards showing the procedures of grape sourcing and harvesting. In addition, by scanning the label the consumers could get the following benefits:

- Redirection to a webpage providing more information on a specific brand of wine or spirit, or to the brand's social media channel.
- Revealing the list of ingredients used to make a classic cocktail, along with a "how to" video.

Augmented reality allows small producers to be differentiated from the competitors, by creating content rich advertising campaigns, which provide customers an insight into their

bespoke drinks. For example, craft brewers could develop print ads, which are augmented and show a video of the production process for their specialised beers and ales.

Sellers of alcoholic beverages (e.g. pubs, bars) can benefit from AR technology, by augmenting their beer taps and coasters to show discounts and promotions when scanned with a smartphone. Restaurants could make augmented menus in order to show wine recommendations for each dish [18].

In the future, everyone could pinpoint their phone at any restaurant and the device camera would immediately recognize the most popular objects, incorporate user interests (through collected data) and combine with information about what others are looking at. Consequently, by scanning any restaurant through your smartphone camera the reviews of its best offers would pop-up on your smartphone's screen. In addition, one could point the smartphone at the menu and examine ingredients of each dish. Restaurants could run an interactive marketing contest, provide nutritional information or preparation methods, thereby, adding more interaction.

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Roles, Problems and Challenges of Special Economic Zones: With Special Reference to Cambodia

Manaranjan Behera^{*}

ABSTRACT

The study has examined the roles of special economic zones for economic development in different countries with more focus on Cambodia. It has also highlighted the problems and challenges faced by the firms in the special economic zones. The zones helped in the economic development of different countries along with Cambodia in various ways such as enhancement of foreign and domestic investment, generation of employment, increase in income, reduction of poverty, stimulation of economy through backward and forward linkages, promotion of export, facilitation of economic liberation, development of technologies and infrastructure, enhancement of trade efficiency and manufacturing competitiveness, transfer of technology and skills, industrial upgrading, and increase in factor productivity, foreign exchange earnings and government revenues. The problems observed in some special economic zones were exploitation of women through payment of lower wage, lack of training or skill upgradation, use of trainees in work to reduce wage cost, suppression of labor standards and core labor rights including trade unionization, poor employment conditions, and no strict environmental standards. In Cambodia, though the zones had significant contribution in the increase of employment, amount of exports and foreign investment but the firms operating in the special economic zones had no contribution in transfer of technology, small investment in research and development, and rare backward and forward linkages. They had faced the problems of high electricity cost, low labor productivity, high worker turnover and poor water quality and waste disposal. The firms had the business links only with the international economy. The government of Cambodia should look to the problems and challenges of the special economic zones and do the needful to improve the performance of special economic zones in the country.

Keywords: *Special economic zone; economic development; employment; foreign direct investment; exports; technology transfer; backward and forward linkages*

1. Introduction

A special economic zone is a geographical region within a nation-state in which a distinct legal framework provides for more liberal economic policies and governance arrangements than those prevail in the country at large. Depending on the geographical location, free trade zones around the world are

called by different names. In the United States, they are called as foreign trade zones while those in developing countries producing specifically for export are typically called export processing zones. They are also called special economic zones in China and India, industrial free zones or export free zones in Ireland, qualifying industrial zones (QIZs) in Jordan and Egypt, free zones in the United

^{*} Professor, Build Bright University, Cambodia. E-mail: mbehera04@yahoo.co.in

Arab Emirates, and duty-free export processing zones in the Republic of Korea (CAGI, 2014). Ge (1999) has defined special economic zones as characterized in general terms as a geographic area within the territory of a country where economic activities of certain kinds are promoted by a set of policy instruments that are not generally applicable to the rest of the countries.

Guruprasad (2015) mentions that special economic zone (SEZ) is a specifically delineated duty-free enclave, and has economic laws different from a country's typical economic laws. SEZ units are self-contained and integrated having their own infrastructure and support services. Usually, the goal is to increase foreign investments. Any private/public/joint sector or state government or its agencies can set up an SEZ. Special economic zones (SEZs) are growth engines that can boost manufacturing, augment exports and generate employment. Business units that set up establishments in a SEZ would be entitled for a package of incentives and a simplified operating environment. SEZ enjoys tax breaks, simplified procedures, less regulations and restrictions, and exemption from customs and duties.

Minishra and Corbett (2008) define SEZ as a trade capacity development tool, with the goal to promote rapid economic growth by using tax and business incentives to attract foreign investment and technology. By offering privileged terms, SEZs attract investment and foreign exchange, spur employment and boost the development of improved technologies and infrastructure. Moreover, SEZs provide a medium wherein it not only attracts foreign companies looking for cheaper and efficient location to set up their offshore business, but it also allows the local industries to improve their exports through a proper channel and with the help of the new foreign partners to the outside world at a very competitive price. Besides duty

free import of raw materials for production, the zones attract big players who want to set up business without any license hassles and the long process involved in it.

The core definition of a free zone, as well as proposed guidelines for them, are contained in the Revised Kyoto Convention of the World Customs Organization (WCO). SEZ policies are essential for the development of the country's economic, political and social implications. Tax incentives, foreign direct investment, and new generation type of employment are also driven effects on the economy of the country. The macro-economic changes through special economic zones push the countries towards the growing socio-political crisis (World Bank, 2008). Special economic zone is a geographical region that has economic laws that are more liberal than a country's typical economic laws. By offering privileged terms, SEZs attract investment and foreign exchange, spur employment and boost the development of improved technologies and infrastructure. Moreover, SEZs provide a medium wherein it not only attracts foreign companies looking for cheaper and efficient location to setup their offshore business, but it also allows the local industries to improve their export through a proper channel and with the help of the new foreign partners to the outside world at a very competitive price. The zones attract big players who want to setup business without any license hassles and the long process involved in it. Most of the allotment is done through a single window system, which is highly transparent system. The bottom-line, therefore, is increased export and foreign direct investments enabling increased public-private partnership and ultimately resulting in a development of world-class infrastructure, and boosting economic growth, exports and employment (Mishra, 2008).

The SEZs were originally intended to serve as a place for testing new reforms of enterprise

management, finance and labor matters, which, if found successful, could be applied throughout the country. This was one of the Beijing government's experiments undertaken for integrated development in the SEZs in order to live her flagging economy. The fundamental objective of the SEZs and open cities was to invite foreign investment in various industries with preferential measures and incentives such as preferential tax status to foreign investors, lower tariffs, better infrastructure, more flexible labor markets, and less bureaucratic control (Hamada, 1974).

For the development of zones in developing countries, Madani and Cling (1999), and Gereffi (1999) outline four broad policy reasons such as: (i) support for a wider economic reform strategy, (ii) help for alleviating growing unemployment, (iii) place of experimental laboratories for the application of new policies and approaches and (iv) attraction for foreign direct investment. The hardware of special economic zones - fully services sites with the purpose to build facilities for sale or lease is aimed at enhancing the competitiveness of manufacturers and service providers. It is intended to realize agglomeration of benefits from concentrating industries in one geographical area. These benefits include efficiencies in government supervision of enterprises, provision of off-site infrastructure, improved environmental controls, and increased supply and sub-contracting relationships among industries, among others. This infrastructure rationale is one of the most important driving forces behind zone development in infrastructure of the poor countries.

The most economic benefits from zone development are both static and dynamic. The static benefits are quite straightforward and include direct employment creation and income generation, export growth and export diversification, foreign exchange earnings,

foreign direct investment and government revenues. The impact of these benefits is obviously amplified in poorer countries where jobs and foreign exchange earnings and government resources are scarce. The dynamic benefits are much harder to measure. These include indirect employment creation, skills upgrading, female employment, technology transfer, demonstration effect arising from application of best practices and regional development (Ljungwall, 2003).

The zones are by different names in different parts of the world known. The most of these are Free Trade Zones (FTZs), Industrial Free Zones (IFZs), Export Processing Zones (EPZs), bonded zones and special economic zones (SEZs). Export Processing Zone was the ancestor of the SEZ. An Export Processing Zone is a relatively small geographically distributed area within a country. The purpose is to attract export industries by providing them the best available investment and trade conditions. The EPZ is an industrial enclave but SEZ is an integrated community with highly developed infrastructure. The principles incorporated in the basic concept of a special economic zone include: (i) geographically delimited area, usually physically secured (fenced-in), (ii) single management/administration, (iii) eligibility for benefits based upon physical location within zone and (iv) separate customs area (duty-free benefits) and streamlined procedures (ILO, 2007). The rationale for the development of special economic zone differs between developing and developed countries. For developing countries, these zones have traditionally had both a policy and an infrastructure rationale. The typical special economic zone policy package includes import and export duty exemptions, streamlined customs and administrative controls and procedures, liberal foreign exchange policies, and income tax incentives to boost an investment's competitiveness and

reduce business entry and operating costs (World Bank, 2008).

SEZs are generally classified as zones that promote increased and streamlined trade through taxation schemes, and reduced customs oversight, but many nuances have developed within this broad framework to accommodate specialized industries, working conditions, country infrastructure, government oversight and geographies. There are six types of SEZs, viz., free trade zones (FTZs), export processing zones (EPZs), enterprise zones, single factory EPZ, and free-ports and specialized zones. First, one of the most expansive types of SEZ is a free trade zone (FTZ). An FTZ is a geographically fenced-in, tax-free area that provides warehousing, storage, distribution facilities for trade, shipping, and import/export operations in a reduced regulatory environment, meaning they generally have less stringent customs controls and sometimes fewer labor and environmental controls. These zones generally focus on the tangible operational trade. Because many SEZs attract labor-intensive manufacturing such as assembly-oriented production of apparel, textiles, and electrical goods. FTZ like the Colon Free Zones in Panama is a very popular type of SEZ. Second, the export processing zones (EPZs) are similar to FTZs in which they encompass large land estates that focus on foreign exports, but they differ in that they do not provide the same degree of tax benefits or regulatory leniency. They instead provide a functional advantage to investors seeking to capitalize on the economies of scale that a geographic concentration of production and manufacturing can bring to a trade region. These zones are beneficial to a host country, if they are successful, because the host country does not have to provide reduced tariffs or regulations but it still benefits from increased trade to the region. Hybrid EPZs are also geographically delimited zones, and they are broken down into specialized zones that cater

to specific industries. In a hybrid EPZ, all industries use the “general” zone’s central resources, but each industry also operates within its own zone created to streamline specialized processes unique to those industries. An example is the Lat Krabang Industrial Estate in Thailand where all investors have access to the general trade area, but within it is a specialized, export-processing zone that only certain export-based investors may utilize. Sometimes these specialized areas are actually fenced off, while other times they are fully integrated within the general SEZ area. Third, enterprise zones not only provide manufacturing or production benefits like other SEZs, but they also provide unique benefits of local and centralized development efforts. They are generally created by national or local governments to revitalize or gentrify a distressed urban area. The empowerment zone in Chicago is an example of an enterprise zone. It was created to revitalize certain south and west Chicago neighborhoods and bring trade to the area by increasing public safety, providing better job training, creating affordable housing, and fostering cultural diversity. If a specific industry is well suited for growth in an enterprise zone, it may take on characteristics of an EPZ or a hybrid EPZ, but the zone’s purpose in promoting trade is secondary to its goal of gentrification and revival. These zones use greater economic incentives than EPZs like tax incentives and financial assistance to revitalize the area by bringing trades into the zone that will spur organic, localized development and improve local inhabitants’ quality of life. This organic growth model assumes that improvement of a region’s industry and trade begins at the individual neighborhood level. Fourth, single factories are special types of SEZs that are not geographically delineated, meaning they don’t have to be located within a designated zone to receive trade incentives. They instead focus on the development of a particular type of factory or enterprise regardless of location. A host

country's goal in utilizing a single factory model is to create specialization in a specific industry. A country that desires to create an export concentration in a specific industry would use a single factory model to promote trade and growth in just that industry, giving each factory specializing in that trade economic incentives. One of the most notable single factory examples is the Maquidora in Mexico. Here factories specialize in the importation of foreign merchandise on a temporary basis where workers assemble or manufacture specific goods and then ship them out to other nations. Fifth, some zones specialize more in human capital goods and services such as call centers and telecommunication processing rather than manufacturing-based industries. Free-ports are typically very expensive zones that encompass many different goods and service-related trade activities like travel, tourism and retail sales. The variations of products and services available to a Free-port cause them to be more integrated with the host country's economy. Most encourage a fully integrated life on-site for those who work in the Free-port, as opposed to just using the SEZ for manufacturing, production and shipping. Examples of these zones can be found in India and the Philippines where large military bases have been converted into free ports that now function as specialized cities. Korea's "international city" on the island of Cheju is another example of a Free-port in use. People live and work in the island and use the Free-port as a draw for high technology, tourism and financial products industries. Finally, specialized zones have been established to promote highly technical products and services unique to an industry. Many of these zones focus on the production and promotion of science and technology parks, petrochemical zones, highly technical logistics and warehousing sites, and airport-base economies. For example, Dubai Internet city is a specialized zone that focuses solely on the development of software and internet-based

services. The Labuan Offshore Finance Centre in Malaysia is another example of a specialized zone that caters mostly to the development of off-shore financial services (CDRI, 2010).

Special economic zones cover a broad range of zones such as free trade zones, export-processing zones, industrial parks, economic and technology development zones, high-tech zones, science and innovation parks, free ports, enterprise zones and others. The main characteristics of the zones are geographically demarked area with physical security, administrated by single body/authority, enjoying financial and procedural benefits, streamlined procedures, having separate custom area and governed by more liberal economic laws. The role of the special economic zones has expanded from trade to investment technology, research and development, service and training. Free zones have become the center of activity in modern economy. They have played a significant role in economic enrichment of developing countries (Furtado, 25.11.2016).

Thus, special economic zones play significant roles in the economic development of the countries in terms of enhancement in employment generation, foreign direct investment, infrastructure development, technology transfer, etc. The present study has examined the roles of special economic zones, and the problems and challenges faced by them in different countries in the world with special reference to Cambodia.

2. Objectives of the Study

The objectives of the study are as follows:

- i. To analyze the concept of special economic zones in different countries in the world including Cambodia.
- ii. To examine the roles of special economic zones for economic

development in different countries in the world including Cambodia.

- iii. To find out the problems and challenges faced by the firms in the special economic zones in different countries in the world including Cambodia.

3. Methodology

The present research is descriptive in nature. A thorough description of the special economic zones and their importance in different countries in world including Cambodia has been made in the study. Necessary facts and information have been used to describe the contributions of special economic zones for the development of different countries. The research is based fully on secondary source of information which have been collected from various sources such as books, reports, articles, Council for the Development of Cambodia (CDC) and relevant websites. In order to meet the objectives of the research, extensive reviews have been done to describe the special economic zones, their roles and problems and challenges faced by them in different countries.

4. Roles, Problems and Challenges of SEZs outside Cambodia

Since the end of the 1960s, most of the studies have focused on the debate concerning the roles of SEZs in economic development, in terms of the kinds of benefits or constraints they may bestow. Some studies stress on the benefits of SEZs for achieving rapid growth. The zones can play in at least four ways: (i) overcoming a common problem experienced by less-developed countries, namely, the lack of resources required to make large scale investment in all regions within a country simultaneously; (ii) experimentation-based learning and trade-based learning; (iii) attracting foreign direct investment (FDI), and promoting export growth and employment

generation; and (iv) facilitating economic liberation, including trade, financial and institutional liberalization (Wong & Chu, 1985). The potential drawbacks of SEZs commonly identified include: (i) the idea that as interconnected relations and complementarities exist among regions and sectors, all sectors and regions should be developed simultaneously, thus making SEZs an inappropriate choice for less-developed countries; (ii) the limited learning related to non-complex assembly work; (iii) the idea that contribution and performance seem to be less important when viewed from a different angle, because of possibly inefficient distribution of resources; and (iv) the risk of increased economic disparity among regions within a country and the resulting risk of social instability (Zhou, 1984).

Findlay (1978) argues that foreign investment in Latin America led to the creation of economic enclaves whose prosperity did not spread to the rest of the country. However, the relatively successful experience of China had featured regionally unbalanced development that was concentrated first in the East and coastal regions and later extended to the West and inland. This development reflected early policy decisions to establish several special economic zones and coastal open areas. These regions gained considerable autonomy, enjoyed preferential tax treatment, and received relatively high levels of resources.

In Korea, from 1974 to 1979, exports from Masan SEZ represented four percent of the country's total exports. However, the contribution of these zones in terms of exports and industrial output appeared far less impressive because the country as a whole had caught up with the firms within the SEZ. This raises important questions such as: (i) what determines the long-term sustainable competitiveness of SEZs; and (ii) is it appropriate that SEZs be phased out of

operation as a country successfully industrializes. China set up four SEZs in 1979, including one in Shenzhen, as a result of its extraordinary growth and success, Shenzhen SEZ had itself become a positive example and impetus for the rest of the world, although a large number of SEZs were already in operation around the globe, it was likely that a growing number of SEZs would continue to appear, both in Asia and worldwide. This was because SEZs had generally provided to be a successful means of fostering economic growth and prosperity (Wong & Chu, 1985). However, despite the general effectiveness, there existed variations in the relative success of SEZs both within China, and between China and other countries. For example, within China, Guangdong's other two SEZs lagged far behind Shenzhen SEZ. Indeed, Shenzhen SEZ was perhaps the most successful example of a SEZ in the world, having enjoyed explosive growth, Shenzhen also stood in stark contrast with some rather unsuccessful SEZs in other countries, including those near Bombay and the Kandla SEZ in India (Osborne, 1986).

The empirical evidence that SEZ generates positive spillovers for local firms is mixed. Some studies found positive spillover effects, some found no effects and some even concluded that there were negative effects. SEZs in some countries had also been criticized for negative socio-economic impacts, particularly in relation to the role of women, labor, and working condition. These include: (i) exploitation of women-lower wage levels, lack of training or skill upgrading and use of trainees to lower wage costs; (ii) suppression of labor standards and core labor rights including trade unionization; (iii) poor employment conditions (work hours, health and safety); and lax environmental standards. During the 1960s and 1970s, the impact of foreign direct investment (FDI) on growth was presumed to be negative, and growth retarding for host least developed countries, the perceptions about

multi-national companies (MNCs) regarding development linkage were more ideological and historical than based on the rational economic theory. One of the important functions that SEZs can perform in a poor country is to supplement the meager domestic savings and hence allow the host country to achieve a higher level of capital formation. This raises the growth performance of the poor country by utilization of resources that would have remained unutilized otherwise. However, the contemporary theoretical thoughts of 1960s and 1970s do not share this optimism from FDI (Kreye, Heinrichs & Fröbel, 1987).

The purported benefits of SEZs to the economy at large stem from their ability to bootstrap the rest of the economy through backward and forward linkages including enhanced infrastructure, technology transfer from overseas, exports and FDI, provide test cases for future directions of the economy, as it did for the transition to a market economy in China, and to create synergistic clusters of industrial activity. The major SEZs in China are confined in Guangdong and Fujian province. Within a few years, these two provinces became economically powerful due to profits from SEZs. Between 1979 and 1995, China received the largest share of FDI in the developing world amounting to US\$ 128.1 billion (Lucas, 1988). The research study on SEZs in India shows that macroeconomic indicators like industrial state domestic product (SDP), service state domestic product (SDP), agriculture state domestic product (SDP), and export state domestic product (SDP) had strong explanatory power for the pattern of SEZs across states. Their analysis demonstrates that looking at bivariate regression equations can be misleading. The bivariate regression equation shows positive relation between land area devoted to SEZs per 100 hectares and service SDP per hundred hectares, but the multivariate regression shows that true relationship is negative (Hein, 1988).

Towards the end of 1980s, many Chinese manufacturers established their plants in the SEZs, partly because of higher foreign exchange retention quota. China's SEZs represented a unique approach to economic development, inflow of foreign investment, and technology transfer for a country that had long advocated inward-looking self-containment policy under her socialist regime (UNCTC, 1991).

Wang (1993) found that, in view of sluggish export growth in the SEZs, plus the rise in the importation of consumer goods, which had led to a substantial deficit in China's balance of trade, in addition to the failure to develop export-oriented industrial bases, the government had adopted in 1985 a number of measures to promote exports. A great step came forward as a part of open policy package with the announcement that the experiments of the SEZs would be extended to larger area inside the country and fourteen coastal open port cities would be opened with special investment incentives for foreign joint ventures.

Papke's (1994) study of India's enterprise zone program estimated the impact on unemployment. It found a reduction in unemployment by about 19 percent. However, data used in the study excluded unemployed persons who had exhausted their benefits, and persons who lost jobs were not covered by unemployment insurance system, and new workers who had not earned rights to unemployment insurance. Considering this exclusion, Papke's estimates tended to overstate the impact of the India's enterprise zone program on reduction in unemployment.

Boarnet and Bogart (1996) presented their econometric evidence regarding the effectiveness of the New Jersey enterprise zone program. They reported no positive impacts on employment and property values. Their

conclusions were that the enterprise zone program in New Jersey was ineffective in achieving the goal of improving the economy in zones and their surrounding areas. However, the authors hinted that enterprise zone incentives in New Jersey might have increased investment without increasing employment or property value, but the data used in this study would not allow such investment effects to be identified. Sridhar (1996) did a benefit-cost analysis on Ohio's enterprise zone program by focusing research efforts on the employment effects of the tax incentives. He tried to identify the effects on job creation by comparing the unemployment rate within the enterprise zone to the unemployment rate in areas without tax incentives. A temporary decrease, ranging up to a 2.9 percentage points change in unemployment rates, was found over the course of one to five years in the enterprise zone.

Foreign firms in SEZs were provided with the following attractions: (i) exemption from import/export duties and from after-tax profit remittance, (ii) tax rates were 15 percent, (iii) wages 75-80 percent lower than in Hong Kong, and (iv) no taxes for foreign personnel. The tax incentives under a zone program may help overcome economic barriers to development of the zone and, thereby, stimulate increases in jobs and income. Enterprise zones are intended to stimulate economic activity in economically distressed areas (Waters, 1997). The foundation of the modern jewelry in India was laid in Santacruz Electronics Export Processing Zone (SEEPZ) in Mumbai in 1987-88. It was there that the "wax setting technique" was introduced in jewelry production, which made mass scale production possible and dramatically transformed the labor-incentive jewelry industry from its cottage industry status into a highly mechanized modern industry (Than, 1997).

Leggett (1998) suggests that the effectiveness of SEZs depends on the stock of human capital in the host country. Only in countries where human capital is above a certain threshold, SEZs positively contribute to growth. They also develop a growth model in which technical progress, a determination of growth, is represented through the variety of capital goods available. Technical progress is itself determined by SEZs as foreign firms encourage adoption of new technologies and increase the production of capital goods. Thus, SEZs lead to growth via technology spillovers that increase factor productivity. Certain host country conditions are necessary to ensure the spillover effects. In particular, human capital (an educated labor force) is necessary for new technology and management skills to be absorbed.

The former SEZs are Free Zones, established for Foreign Direct Investment (FDI). There is a considerable body of literatures emphasizing the positive impact of SEZs on economic growth. SEZs help in increasing capital formation and economic growth by introducing new technologies such as new production techniques, managerial skills ideas, and variety of new capital goods. The literature suggests that the growth rate of least developed countries depends heavily on developed countries. By adopting new technologies and ideas, least developed countries may catch up with the level of technology in developed countries (ibid).

Bondonia and Engberg (2000) looked at data from enterprise zone programs in California, Kentucky, Pennsylvania, New York, and Virginia's enterprise zones, and found no significant changes in employment growth, per capita income, or poverty rates. Enterprise zone creation was one of the principal mechanisms by which state governments and federal government tried to promote economic development in designated locations; and an

enterprise zone program was a policy instrument designed to overcome high economic costs and barriers to development and thereby stimulate growth in jobs and income.

According to Greenbaum and Engberg (2000), employment growth may shift rather than add employment within the region. Creating an enterprise zone may cause some employers, who would have located just outside the zone, to locate within the zone, and take advantage of tax incentives and other benefits. This may not further the policy goals of the program. Benefits may last for only a short time. Enterprise zones may be less successful after several years (e.g., three years to six years). There may be many reasons for short-lived benefits. One reason might be that investor entrepreneurs wait for the right moment. Additional subsidies might push some into investing in a site. Afterwards, growth would be slow because fewer or no investors are ready and waiting for the right moment and subsidy.

Fisher and Peter (2000) found no significant increase in employment while examining enterprise zones across the country. An enterprise zone program was considered a success only if the benefits outweigh the costs. Therefore, the tasks for empirical studies were to identify and measure the benefits and costs, particularly the increases in employment and income that resulted from the policy implementation. A real task for any empirical enterprise zone study was to identify the zone effects in comparison with what would have happened in the zone without the zone policy. It was likely that some zones that had shown growth might have done so regardless of whether there was an enterprise zone program or not. Alternatively, in some other zones, employment and income may have been much lower in the absence of an enterprise zone program. Jayanthakumaran (2002) mentioned that SEZs were a much more significant source

of employment generation in smaller countries with population of less than five million (e.g., Mauritius, the Seychelles and Jamaica) than in larger countries. Even in Mexico, for example, the highly visible and successful Maquiladora program accounted for only 3.2 percent of total jobs.

According to Taiwan Ministry of Economic Affairs (1996), and Korea Ministry of Industry and Trade (1998), the shares of EPZ exports in the total exports of Taiwan and Korea were quite substantial. The export value of Taiwan's EPZs accounted for six percent in 1996 and 5.6 percent in 1995 of Taiwan total exports, and the export value of Masan EPZ accounted for about four percent in 1978 and two percent in 1995 of Korean total exports. SEZs were established after the model of EPZs, especially in Taiwan and Korea which had already achieved a significant success (Ota, 2003a).

The contribution of special economic zone to economic growth has been debated quite extensive in the literature. The traditional argument is that SEZ improves economic growth by increasing the capital stock, whereas, recent literature points to the role of SEZ as a channel of international technology transfer. The economic performance and impact of zone programs in developing countries have been evaluated in numerous studies. Most of these, however, have focused on government-developed and run zones and largely neglected the economic impact of private zone development. There is growing evidence that SEZ enhances technological change through technical diffusion. Moreover, SEZ not only contributes to imports and export of more efficient foreign technologies, but also generates technological spillovers for local firms (Ljungwall, 2003).

It was found that economic growth in China had been impressive since the reform and open-door policy was adopted. This was possible

because of the establishment of special economic zone and economic development in the country. The SEZ was the key instrument in the open-door policy, though its relative importance declined as the stage of economic development advanced. The overall economic performance of the SEZs in the first stage during the mid-1980s was disappointing. Various social and economic problems caused drastic changes in the special economic zones. The reform and open policy had been modified to cope with the problems such as expanding inequity and regional disparity, and the experiences of the SEZs were extended to the wider areas opened with preferential incentives. The experience gained through the management and operation of the SEZs helped considerably contributing to enhanced growth in the opened regions (Ota, 2003b).

In the early 1990s, the Philippines decided to stimulate the development of private zones and industrial parks rather than expanding public ones. It had completely eschewed the development of new public-sector zones since new legislation was passed in 1995. EPZs in the Philippines were providing the following incentives: (i) income tax holiday or exemption from corporate income tax for four to eight years, (ii) exemption from duties and taxes on imported capital equipment, supplies, and raw materials, (iii) domestic sales allowance equivalent to 30 percent of total sales, (iv) exemption from export taxes, and (v) lenient immigration laws. The net export ratio among the Philippines' eco-zone firms was 45 percent in 2003. According to the Philippines' Export Zone Authority, the experience of other zone-sponsoring countries in other regions had been similar. In Mauritius, for example, net EPZ exports increased from 23 percent in 1980 to 41 percent in 1995 and nearly 50 percent in 2002 (ILO, 2003). SEZs accounted for over 55 percent of total Indian jewelry exports in 2002-2003. Zones had also been instrumental in creating the base for growth of the electronic

industry through technology transfers, spillovers and demonstration effects. Until the early 1980s, electronic hardware exports were primarily originating from EPZs. Even during 2000-2002, the share of SEZs in total hardware exports was as much as 26 percent (SCRIBD, 14.12.2017).

Most studies on special economic zones mainly focused on zone effects in terms of employment and income, while some others also provided analysis on property values and other effects of the zone program. Used data from the California enterprise zone program found an increase in the number of establishments in industries of finance, insurance, real-estate, wholesale and retail trade establishments, but a decrease in the number of manufacturing establishments. However, this finding was not significantly related to the creation of a zone (Moore, 2003).

Knutsen (2004) used census tract data and demonstrated temporary gains of enterprise zone in employment in California, although such gains were at least partially lost sometime between 7-13 years after the program began. However, this study found no positive effects on income. It was likely that some zones that had shown growth might have done so regardless of whether there was an enterprise zone program or not. Alternatively, in some other zones, employment and income might have been much lower in the absence of an enterprise zone program. Therefore, it was desirable to separate the zone effects from background effects. Zones can and do play a major role in employment creation in certain countries. Employment in the Dominican Republic's industrial free zones rose from 500 in 1970 to almost 200,000 in 2004. The share of zone employment of national employment varied widely, with Honduras at 4.6 percent, the Dominican Republic at 6.2 percent, Tunisia at 8 percent, Fiji at 10 percent, the Seychelles at 12 percent, Mauritius at 24 percent, and the

United Arab Emirates at 25 percent. The impacts of these jobs in countries with high rates of unemployment and underemployment were significant (Cling et al., 2004).

According to DFID (2004), many of the countries, such as the United Kingdom, Italy and Denmark had used free trade zones (FTZs) for centuries. Most Western European zones restricted manufacturing and other activities, only allowing packing/re-packing and warehousing. This was due in large part to EU regulations. As a result, processing operations were only permitted in the Hamburg FTZ (Germany), and in the FTZs of the Canary Islands (Spain), Azores and Madeira (Portugal). All other zones in the EU operated as free trade zones. Because most of these zones were located in ports, they were controlled by port or customs authorities, and were, therefore, publicly developed and managed.

In China, the SEZs contributed to 20 percent of the total foreign direct investment (FDI) of the country. The SEZ model was also successfully implemented in Poland and Philippines. In the former, the SEZs contributed to almost 35 percent of the FDI inflows. Shenzhen in China had been at the helm of rapid economic development, after growing by a staggering 28 percent for the last 25 years (Gao, 2005). Sri Lanka followed the way of offering incentives to investors. These included 100 percent of foreign ownership, a tax holiday up to 10 years with complete tax exemption for remuneration of foreign personnel employed, royalties and dividends of shareholders during that period, and duty exemptions for the importation of equipment, construction materials and production inputs. In addition, EPZ units were provided with industrial services such as land, power, water and telecommunication services at subsidized rates. However, in the late 1990s, the government curtailed the incentives. Tax holidays were gradually reduced to 3-5 years.

Furthermore, conditions for tax exemptions on dividends, exemptions in turn-over tax and expatriates' incomes were made more stringent. All labor laws were made applicable. The ban on trade unions in these zones was removed (Aggarwal, 2005). In India, the SEZ scheme was started in 2000 and the SEZ Act was passed in 2005. The objectives for setting up SEZs in India were: (i) generation of additional economic activity, (ii) promotion of exports of goods and services, (iii) promotion of investment from domestic and foreign sources, (iv) creation of employment opportunities, and (v) development of infrastructure facilities. While policy objectives did not explicitly include balanced regional development, proponents of the policy had claimed that SEZ Act facilitated a more balanced pattern of development (Aggarwal, 2006a & 2006b).

Imrohoroglu and Swenson (2006) used data collected over the past twenty years from enterprise zones across California, and examined the enterprise zone impacts by delineating border areas as control groups. This study found positive impacts of enterprise zone programs along economic dimensions of employment, income and poverty level. The main argument was that economic growth as demonstrated in rising Gross Domestic Product (GDP), was not necessarily the same as economic development nor did it always mean an improvement in the well-being of the majority of the people in a country. Moreover, a nation's development path should be defined by the people's aspirations and priorities rather than corporate interests, and the development process should respect human rights standards. A micro level analysis of the zones contribution to industrialization efforts in India reveals that EPZs had a catalytic effect in promoting new production sectors, exporting new products and in building up the country's image in certain products in international markets (Aggarwal, 2006a). Though India was the first Asian country to take the free zone initiative and set up the first

zone in Kandla as early as in 1965, the share of SEZs in exports was a mere five percent in 2004-2005. Furthermore, they accounted for only one percent of factory sector employment and 0.32 percent of factory investment in the same year (Aggarwal, 2006b).

A special economic zone embracing Batam, Bintan and Karimun islands in Indonesia had seven initial investment projects worth US\$ 566.4 million. The country had experienced 194 percent increase in foreign investments in 1993. As part of the negotiations for the General Agreement on Tariffs and Trade (GATT) and the Asia-Pacific Economic Cooperation (APEC), the country eliminated all restrictions on foreign investments. Indonesia's bonded zones were in government hands, but it's over 100 export-oriented industrial estates were almost wholly privately developed and run. While most zones host traditional light manufacturing and assembly-style export processing activities, Indonesia's net exports of firms located in bonded zones reached 62 percent in 1990 (Halim, 2006).

Bondonio and Greenbaum (2007) did a comprehensive study using plant level data from enterprise zone programs in eleven states of the United States, in an effort to sort out growth outcomes into gross flows accounting for new, existing, and vanishing business in the zone areas. This study focused on enterprise zone effects upon employment, sales, capital expenditures, and payroll per employee outcomes, and found only modest (statistically insignificant) impacts from enterprise zone incentives.

The rationale for free zone development in industrialized countries is more varied. The new Free Economic Zone program in the Republic of Korea, which was a broader concept than a regular export processing zone, and the 22 foreign access zones in Japan, for example, were explicitly intended to promote

foreign investment. The main rationale for the Shannon Free Zone in Ireland, in contrast, was to establish a “growth pole” in the economically distressed southern part of the country. Revitalization of economically distressed urban and rural areas was the motivation behind the many enterprise zone-style programs in the United Kingdom, France, and the United States. But overall, enhancing trade efficiency and manufacturing competitiveness remained the principal rationale behind special economic zone programs in most industrialized countries (World Bank, 2008). The U.S. Foreign Trade Zone program was a typical example. Operating costs were lower in a zone as a result of reduced insurance, security, and overhead costs. Cash flow was enhanced by the ability to postpone duty payments until and only upon entry into the domestic customs territory. Foreign trade zones had been critical in enabling manufactures to operate “just-in-time” systems. The efficiency advantages provided by these zones were arguably more important for industrialized countries even with the advent of modern production concepts and approaches, and the reduction of tariff and non-tariff barriers (FIAS, 2008).

Besides the variations in the relative success of SEZs in achieving economic growth, variations also existed in the abilities of particular SEZs to sustain their performance. Whereas several SEZs initially brought about unprecedented growth, their growth did not continue. Moreover, their importance gradually faded with time as the economy as a whole started to acquire the capabilities and resources that were formerly concentrated in the SEZs. For instance, three EPZs of Taiwan, namely, Gaoxiong (Kaosiung), Nanze and Taizhong, played an important role for economic development through the 1960s and the first half of the 1980s. In 1981, they accounted for no less than seven percent of the overall export

volume of the entire inland (World Bank, 2008).

The Shannon Free Zone in Ireland was the world's first EPZ, established in 1958, inspiring the development of EPZs in emerging markets worldwide. Although less important as a catalyst for economic growth, the zone was critical to the growth of exports, attraction of FDI, and outward orientation of the Irish economy. Shannon zone offered investors security access to European markets, attractive tax benefits, and subsidized rent and facilities. Specialized training and manpower development facilities were integrated into zone design from inception. As a result, export manufacturing activities accelerated. There were 120 companies employing over 7,500 within the zone. As a large share of the zone's activities was in services sectors, the zone's contribution to overall merchandise exports was relatively small, accounting for less than three percent of the total. On a yearly basis, Zone exports totaled \$ 2.5 billion and imports \$ 1.2 billion (ILO, 2007).

Thailand established 34 industrial estates located in 14 provinces among which 22 estates had been running by private sectors. The Industrial Estate Authority of Thailand Act had enabled investors to receive lucrative incentives like easy access to licenses or permits, for instance, for land allocation, factory construction, etc., as well as tax benefits and reduction in customs and other duties. As of September 2003, there were about 96 SEZs. Each of these economies had succeeded in moving from low value-added manufacturing to attract investment and encouraging exports in a wide range of industries, including electronics assembly, component manufacturing, automotive assembly and chemical processing. Thailand's FDI had been a major contributor to Thailand's economic growth since the mid-1980s. In the late 1980s, about 50 percent of FDI inflow went

to the manufacturing sector, especially in the area of labor intensive and export-oriented industries (FIAS, 2008).

Special economic zones had been adapted by many countries, particularly in the Asia region, as a popular means by which to foster and stimulate economic development, encouraged by the success of SEZs in other Asian regions and countries (Boarnet & Bogart, 1996). These zones were essential tools for companies seeking to cut costs and improve inventory efficiency. They helped in developing nations' poor and inefficient trade policies and dilapidated or non-existent infrastructure. The most important fiscal goal of a SEZ was to facilitate economic growth through the use of reduced tariffs and more efficient customs controls. The first modern special economic zone was created in Puerto Rico in 1942. Since then, 147 countries, many of them having emerging markets, had developed over 5,000 zones. Their development had helped to improve global trade relations, and created over 70 million jobs and hundreds of billions of dollars in trade revenue. The zones were implemented to meet fiscal, social, and infrastructure policy rationales (World Bank, 2008).

The Arab Republic of Egypt, the Syrian Arab Republic, Israel and Jordan established government-run zones in the 1960s and 1970s at about the same times that zones were first set up in the Philippines, the Dominican Republic, the Republic of Korea and Taiwan. The majority of zones in the Middle East and North Africa region were free trade zones, aimed at facilitating trade with their host countries. Though many of these zones started manufacturing, trading and associated activities (for instance, packaging and repackaging, break-bulk) remained predominant. With a handful of exceptions, the economic contribution of zones in the Middle East had been negligible compared to zone programs in the Far East and

Latin America, largely due to their traditional focus on trading activities rather than manufacturing. The notable exceptions to this were zones in Egypt and Jordan, which had developed a manufacturing focus on enterprises in the qualified industrial zones (FIAS, 2008).

Several African countries were pioneers in using free zones as economic development tools. Liberia and Senegal, for example, established EPZs in the early 1970s. In 1981, Mauritius started a single factory-based EPZ program whose prominence and success led to a wave of zone development throughout the continent in the late 1980s in East-Southern and West-Africa. Most countries in the region implemented both pure EPZ approaches along with single factory models. With the notable exceptions of Ghana (where most zones were private), most zones were developed and operated by government, typically by an EPZ authority. A number of countries such as Madagascar, Mali, Mauritius and the Seychelles implementing single factory EPZ programs had been quite successful in terms of job creation and exports (ibid).

The biggest challenges faced by SEZs were the taking away of agricultural land from the farmers. The farmers were being paid disproportionate money which was not in lieu of the current land prices. SEZs were leading to decrease in crop production (arable land grabbing) thus slowing down of agricultural activity in the country. Though it might help boost it in other ways by increased export of local goods, both processed and non-processed. More and more farmers were moving towards the lucrative manufacturing side in search of greater economic security. The greatest problem that seemed to be emerging out was that arable land was being used for non-agricultural purpose which could lead to food crisis and loss of self-sustenance in future. But FDI could help in providing farmers to gain

access to technological better farming methods. SEZs if not properly located could lead to supply chain management problems as well. Moreover, improper planning could lead to unbalanced growth in the region giving an impression of pseudo-development. SEZs could also lead to increase in income disparities between the rich and poor if not properly planned, and cause environmental pollution. For example, Shenzhen had been the worst affected among SEZs in China where the sky was grey for most part of the day because of the polluting industries (Mishra, 2008).

Neumark and Kolko (2010) examined establishment-level data from the California enterprise zones program, and provided evidence that the enterprise zone program in California failed to increase employment. This study found no shift of employment toward lower-wage workers or the manufacturing sector. Since these areas had been specifically targeted by the enterprise zone incentives, they concluded that the California enterprise zone program was ineffective in achieving its primary goals.

Farole and Akinci (2011) cited empirical research which showed that many SEZs had been successful in generating exports and employment and that SEZs had commonly come out marginally positive in most cost-benefit assessments. Milberg and Amengual (2008) noted that most researches from the 1990s found scant evidence of SEZs' positive impact on backward linkages, technology transfer, or industrial upgrading. They stressed that while some economies, such as the Republic of Korea and Taipei, China in Asia, had managed to create substantial linkages, domestic orders remained at a very low level, with the most common range of domestically purchased inputs lying between three percent to nine percent. The authors also noted that technological spillovers were rare, since the low-skill assembly type productions commonly

found in SEZs were not conducive to technology transfer. Finally, while developing economies had managed to increase their share of world exports of manufactured goods, their share of manufacturing value-added had not increased proportionally, suggesting that SEZs had failed to spur industrial upgrading significantly.

The special economic zones and industrial clusters had made crucial contributions to China's economic success. Foremost, the special economic zones successfully tested the market economy and new institutions, and became role models for the rest of the country to follow. Together with the numerous industrial clusters, the special economic zones had contributed significantly to gross domestic product, employment, exports, and attraction of foreign investment. The special economic zones had also played important roles in bringing new technologies to China and in adopting modern management practices (Zeng, 2011).

The study in Tanzania reveals that the export processing zones authority did not have a complete picture of the actual firms that were operating in SEZs. Many firms in the lists provided had ceased operations. SEZs in Tanzania appeared to be highly disorganized. Many firms were non-operational and it appeared that the export processing zones authority did not have a good handle on how the SEZs were functioning in practice. Firms located in SEZs were overly burdened with red tape and bureaucratic procedures that added significantly to their cost structure and reduced their competitiveness. Firms, while benefiting generally from better infrastructure, were constrained by the supply of energy and power. Many firms reported that energy outages within zones were a major constraint on production. Accessing labor with the necessary skills appeared problematic for firms located in Tanzania. The interactions between firms

within zones and with the local community appeared to be very limited. However, firms were benefiting from technological transfers through the supply chain and from export markets but not from each other. Access to export markets was another important benefit to firms locating in zones. Finally, the interaction of workers with the local economy showed an opportunity for economic development within the local economy around SEZs (Kinyondo, Newman & Tarp, 2016).

5. Background of Special Economic Zones in Cambodia

Cambodia has 181,035 square kilometers (69,898 square miles) in area, bordered by Thailand to the northwest, Laos to the northeast, Vietnam to the east, and the Gulf of Thailand to the southwest, with a population of over 15 million (Wikipedia, n.d.). Following more than two decades of strong economic growth, the country had attained the lower middle-income status as of 2015, with gross national income (GNI) per capita reaching \$1,070. Driven by garment exports and tourism, Cambodia had sustained an average growth rate of 7.6 percent in 1994-2015, ranking sixth in the world. Poverty continued to fall in Cambodia, albeit more slowly than in the past. In 2014, the poverty rate was 13.5 percent compared to 47.8 percent in 2007. About 90 percent of the poor lived in the countryside. While Cambodia had achieved the Millennium Development Goal (MDG) of halving poverty in 2009, the vast majority of families who escaped poverty were only able to do so by a small margin. Around 4.5 million people remained near-poor, vulnerable to falling back into poverty when exposed to economic and other external shocks. Health and education remained both important challenges and development priorities for Cambodia. The country faced a number of development challenges, including the need for good quality public service delivery, inclusive

development, better land administration and natural resources management, environmental sustainability, and good governance. The success of addressing these challenges would rest not only on maintaining macroeconomic stability and enhancing economic diversification and export competitiveness, but also on improving the quality of public service delivery (The World Bank, October 2017).

Recognizing that the real economic growth necessary to achieve the country's developmental goals lies in the development of a healthy private sector, the Royal Government of Cambodia undertook a program of reform to promote private sector investment. As part of this reform, the law on Foreign Investment in the Kingdom of Cambodia of 1994 established the Council for the Development of Cambodia (CDC). This law made the CDC the highest decision-making level of the government for private and public sectors investment. The examination of introduction of the concept of economically promoted zone/area in Cambodia was originally started back in 1960's, and the special economic zone scheme had been finally introduced in Cambodia for the first time in December 2005. "Sub-Decree No.147 on the organization and functioning of the CDC" was issued on 29 December 2005 to restructure the organization of the CDC and a new wing of the CDC called the "Cambodian Special Economic Zone Board (CSEZB)" was established to manage the special economic zone scheme. To govern the SEZ scheme, sub-decree no.148 on the establishment and management of the special economic zone (the SEZ Sub- Decree) was issued on 29 December, 2005. In addition, the law on the special economic zones was drafted by the CDC in 2008 (Government of Cambodia, 2005).

As per the sub-decree, SEZ refers to the special area for the development of the economic sectors, which brings together all industrial and other related activities and may include general

industrial zones and/or Export Processing Zones. Each special economic zone shall have a production area, which may have a free trade area, service area, residential area and tourist area. It must have a land of more than 50 hectares with a precise location and geographic boundaries; a surrounding fence; management office building and zone administration offices and provision of all necessary infrastructures; and water sewage network, waste water treatment network, location for storage and management of solid wastes, environment-protection measures and other related infrastructures as deemed necessary. The special economic zone may be established by the State, private enterprises or joint venture between the State and private enterprise. Zone developer has to have the following ability and duties: (1) sufficient capital and means to develop the infrastructures in the zone, including the human resources to manage the activities of the zone; (2) legal rights to possess the land for establishing the SEZ; (3) infrastructures in the zone; (4) to lease the land and provide services to the zone investors; and (5) to arrange security personnel and ensure good public order in the zone at all the time.

There are six steps in the application process for the development of SEZ. First, zone developer submits a request for approval for the development of a special economic zone to the Cambodian Special Economic Zone Board (CSEZB) and applies for the qualified investment project (QIP) (Application fee: 7 million Riels). Second, the CSEZB shall notify whether to approve or reject the request to the zone developer within 28 working days, and a conditional registration certificate (CRC) shall be issued after approval. Third, the zone developer conducts the detailed economic feasibility study, and prepares infrastructure master plan and the other certified documents as stipulated in the CRC within 180 working days. Fourth, within 100 working days after it receives the above project materials, the

Cambodia Special Economic Zone (CSEZ) obtains all necessary approvals and authorization from the government and issues the final registration certificate (FRC). Fifth, upon issuance of the FRC by the CSEZB, the sub-decree is issued to define the establishment of the SEZ and its boundaries. Finally, the CSEZB has the right to withdraw the approval on the establishment of the zone and incentives which were granted through the FRC on the basis that the zone developer has not implemented at least 30 percent of the total investment capital of the project within 365 working days after receiving the FRC (ibid).

The Cambodian Special Economic Zone Board (CSEZB) under the CDC is the “One-Stop Service” organization in charge of the development, management and supervision of operations of the SEZ, and the SEZ administration is the state administration management unit which is the “One-Stop Service” mechanism at the site of the SEZ and set up by the CSEZB in order to be permanently stationed in each SEZ. In the “One-Stop Service” center, representatives of all relevant government ministries are present on the SEZ site, and available to process on the site the documentation firms require for export, import, employment, and other regulatory matters. This service is intended to remove the necessity for firms to visit ministry offices in Phnom Penh for all but the most important matters. The cost of providing this one-stop administrative service must be met by the zone operator, who charges the firms locating within the zone a fee for the package of services provided (Warr & Menon, 2015).

A firm wishing to locate in an SEZ must first obtain government approval as a Qualified Investment Project (QIP), which requires that the firm has a minimum of \$500,000 fixed assets. There is no distinction between foreign and domestic firms in this respect, but almost all of the firms located in the SEZs were

foreign. Approval as a QIP entitles the firm to receive certain government incentives, and it is possible for a QIP firm to locate either inside or outside the SEZs, receiving the QIP incentives whether the firm is inside an SEZ or not (ibid).

The “Special Economic Zone Trouble Shooting Committee (SEZ TSC)”, which is located at CDC, has a duty to promptly settle all issues occurring in the SEZ, whether pertaining to technical or legal aspects, or issues under the joint jurisdiction of ministries or in institutions and beyond the competence of the SEZ administration or the CSEZB. It has the further duty to be a mechanism to receive any complaint, and find solutions to such complaints filed by zone developers as well as by zone investors. The composition of the SEZ TSC is as follows: Chairman of the CDC (Chairman), Minister of the Council of Ministers (Member), Minister of Economy and Finance (Member), Minister of Commerce (Member), Minister of Land Management, Urbanism and Construction (Member), Minister of Environment (Member), Minister of Industry, Mines and Energy (Member), Minister of Public Works and Transportation (Member), Minister of Labor and Vocational Training (Member), Secretary General of the CDC (Member) and Secretary General of the CSEZB (Secretary) (Government of Cambodia, 2005).

The zone investor who starts activity of production or services in the fields permitted by related laws and sub-decrees in any SEZ shall complete the formalities based on the procedure by preparing all the required documents and submit them to the office of the SEZ administration in the SEZ for registering investment proposals during working hours and before the office of the SEZ administration. The SEZ administration has a duty to decide on the registration of the investment proposal based on the legal, administrative and technical aspects and on the issuance of the FRC. Such

process has to be in compliance with the procedures of investment registration set forth in the law and sub-decree on the implementation of the law on amendment to the law on investment. Any incentive provided to the zone investor shall be decided by the SEZ administration through the “One-Stop Service” mechanism located on the site and in accordance to the relevant laws and regulations. On all other requests in the investment process of zone investors, the SEZ administration shall play the role of facilitator to address issues of the zone investor with the relevant ministries/institutions of the Royal Government of Cambodia (ibid).

To start a business in Cambodia, both domestic and foreign investors have to follow administrative procedures. The time needed to get started depends on the nature of the planned operation and the complexity of the project. In certain circumstances, an investor can start operations within a month. Every business in Cambodia must register with the Ministry of Commerce. An investment project must also register with the CDC before commencing operations if it wants to benefit from incentives. The registration process is fairly straightforward; however, a large volume of documentation needs to be prepared (e.g., the memorandum and articles of association) in the Khmer language and submitted with the application form to register a business. The business also needs to register its address with city Hall. Once this is done, the business receives a registration certificate indicating a company identification number. The process usually takes three weeks.

In the SEZs, special rules are applied. Those are: (1) the EPZ has specific entrances/exits, which are determined by the CSEZ; (2) nobody can stay in the SEZ after working hours except for permanent guards and persons authorized by the SEZ administration; (3) schedule time for entry and exit from the EPZ for the

authorized persons, including the import of goods, shall be determined by the internal rules of the SEZ administration according to the agreement between the zone developer and the SEZ administration; (4) import/export of goods to/from the EPZ shall be considered as import/export of goods to/from Cambodia, which requires the owner of the goods to fulfill the formalities of import-export with the competent authority in the SEZ prior to its import-export; (5) the aforementioned competent agents shall prepare all forms which should be simplified, transparent and do not cause any difficulty for the control of those goods; (6) the goods shall be properly sealed by the customs officers before import/export; (7) no retail business can locate in the EPZ, even though it is conducted for serving the public or social interests; (8) the zone investor, although being the owner, shall not use output materials of production produced in the SEZ without permission of the administration of the SEZ; and (9) the zone investor is entitled to the incentive. Foreign managers, technicians or experts may be employed, provided that the number of foreign staff does not exceed 10 percent of the total number of its personnel. A zone developer has a duty to cooperate with the Ministry of Labor and Vocational Training (MLVT) to facilitate the training of Cambodian workers and employees and to promote new knowledge and skills for them with specific and effective programs (ibid).

In relation to SEZs, the CDC has the following roles and responsibilities: (1) to serve as the “One-Stop Service” mechanism and the “Etat-Major” of the Royal Government in the examination and approval of proposals to establish SEZs in Cambodia either by the State, public-private joint ventures, or private enterprises; (2) to analyze and develop strategic plans, in cooperation with the relevant ministries and institutions, to identify appropriate locations for the establishment of SEZs, and to set the vision on SEZs to attract

developers and investors, and to realize this vision by making Cambodia a future modern business center; (3) to promote SEZ investment projects formulated by the Royal Government and inform developers of these projects through all effective and fast media; (4) to initiate and coordinate the management of SEZs which are the priorities of the Royal Government; (5) to initiate and recommend to the Royal Government on the preparation and the amendment of laws and regulations related to SEZ so as to create favorable conditions for SEZ development and investments; (6) to manage, provide incentives and investment guarantees, and respond to requests and inspect SEZs; (7) to assign officials to the SEZs as deemed necessary; and (8) to produce and submit semi-annual reports to the Royal Government for its review and take necessary measures to improve investment in special economic zones. The relation between the CDC and the relevant ministries and other governmental institutions in the management of special economic zones are as follows: (1) the CDC is the “One-Stop Service” of the Royal Government in examining and approving the registration of proposal to establish special economic zones; (2) the relevant ministries and the institutions provide their opinions in the examination and approval of special economic zone establishment projects through the “One-Stop Service” mechanism; (3) the CDC cooperates with the relevant ministries and institutions in the establishment of an administration office in each special economic zone and provides instructions on the issuance of permits and authorizations by the administration office to investors in the special economic zones to ensure that it is made in an effective and timely manner (Government of Cambodia, 2008).

The CSEZB provides incentives to all SEZs in the Kingdom of Cambodia as per article five. The proposal for tax exemption on the import of materials, equipment and construction

materials for the construction of the zone by the zone developer is submitted to the CSEZB for review and decision. Duty exemption on import of production equipment, construction materials and production inputs is approved for the zone investors according to the proposal and in compliance with law. The zone investors prepare a list of production equipment, construction materials and product inputs to be imported and submit it to the SEZ administration for approval at the zone itself. Subsequently, the SEZ administration reports on its decision to the CSEZB and relevant institutions for information. Eligible fiscal incentives for the zone investors are specified in the FRC to be issued to the zone investors in accordance with the law and sub-decree on the implementation of the law on the amendment to the law on investment of the Kingdom of Cambodia in force.

As per article six, the zone developers and zone investors including foreign investors receive a number of incentives for their investment activities. The tax on profit exemption period is provided for a maximum period of nine years in compliance with Article 14.1 of the law on the Amendment to the law on investment of the Kingdom of Cambodia. The import of equipment and construction materials to be used for infrastructure construction in the zones are allowed and exempted of import duties and other taxes. The zone investor receives the fiscal incentives as provided in Article 14.9 of the law on the amendment to the law on investment of the Kingdom of Cambodia and other relevant regulations. He/she is entitled to receive the incentive on Value Added Tax at the rate of zero percent for its every import. In case the production outputs are imported into the domestic market, the zone investor has to refund the amount of Value Added Tax as recorded in comparison with the quantity of export. As mentioned in Article seven, the zone developer receives custom duty exemption on the import of machineries and equipment for

the construction of the road connecting the town to the zone, and other public service infrastructures for the public interests as well as for the interests of the zone. The zone developer, the zone investor and foreign employees have the right to transfer all their income derived from the investment and salary received in the zone to banks located in other countries after payment of tax. Apart from the fiscal incentives, the zone developer and the zone investor are entitled to obtain the investment guarantees as stated in Article 8, Article 9, and Article 10 of the law on investment in the Kingdom of Cambodia and other relevant regulations (Government of Cambodia, 1994).

The Royal Government of Cambodia recognizes that special economic zones (SEZs) are an important part of the country's economic development because they bring infrastructure, jobs, skills, enhanced productivity and the prospect of poverty reduction in rural areas. A sub-decree on the establishment and management of special economic zones (to include export processing zones and free trade zones) was adopted in December 2005. The Royal Government has since approved a total of 38 special economic zones (SEZs) such as: (1) Thary Kampong Cham SEZ, (2) Tai Seng Bavet SEZ, (3) Manhattan (Svay Reing) SEZ, (4) Goldfame Pak Shun SEZ, (5) Doung Chhiv Phnom Penh Den SEZ, (6) D & M Bavet SEZ, (7) Kampot SEZ, (8) Phnom Penh SEZ, (9) Poi Pet O'Neang SEZ, (10) Neang Kok Koh Kong SEZ, (11) Suoy Chheng SEZ, (12) Oknha Mong SEZ, (13) Kampong Saom SEZ, (14) P (SEZ) IC, (15) Kiri Sakor Koh Kong SEZ, (16) S.N.C. SEZ, (17) Stung Hav SEZ, (18) Sihanoukville SEZ 1, (19) Sihanoukville SEZ 2, (20) Sihanoukville Port SEZ, (21) MDS Thmorda SEZ, (22) N.L.C. SEZ, (23) Try Pheap Ou Ya Dav SEZ, (24) Hi-Park SEZ, (25) Shandong Sunshell Svay Rieng SEZ, (26) Zhong Jian Jin Bian Jing Ji Te Qu SEZ, (27) Sanco Cambo SEZ, (28) Dragon King Bavet

SEZ, (29) Sovannaphum SEZ, (30) Svay Rieng GIGA Resource SEZ, (31) Kandal SEZ, (32) H.K.T. SEZ, (33) Ratana SEZ, (34) Chhak Kampongsaom SEZ, (35) UBE Snoul SEZ, (36) Tian Rui Agricultural Trade SEZ, (37) Poipet PP SEZ and (38) Intervia Automobile Industry Complex SEZ (OpenDevelopment Cambodia, 30.05.2016).

6. Roles, Problems and Challenges of Special Economic Zones in Cambodia

In 2014, there were nine SEZs operating in Cambodia, which were relatively small. Total employment in all the operating SEZs was around 68,000. Manhattan SEZ in Bavet was the largest single SEZ, with total employment of 28,000 (41.32 percent), while the other two SEZs in Bavet employed 8,000 (12.15 percent)

workers. Phnom Penh SEZ employed 17,000 workers (25.04 percent), Sihanoukville's three SEZs employed just under 10,000 (14.45 percent) and the zones in the Thai border areas of Koh Kong and Poi Pet employed just under 5,000 (7.05 percent). The SEZs in Cambodia represented just under one percent of total employment and 3.7 percent of total secondary industry employment. By comparison, Cambodia's garments sector, mostly outside the SEZs reportedly accounted for about 600,000 employees, about 38 percent of total secondary industry employment, or 10 times the size of all SEZs combined. The highest number of employees per firm, i.e., 1079, was seen in Manhattan SEZ, followed by 988 in Neang Kok Koh Kong SEZ, whereas, the lowest number, i.e., 140, was in Dragon King SEZ (Table 1).

Table 1: Operating special economic zones by number of firms, employment and employees per firm, 2014

Location	Name of SEZ	Year Established	Number of Firms Operating	Total Employment	Employees per Firm (Avg)
Phnom Penh	Phnom Penh SEZ	2008	50	17000	340
Bavet	Manhattan SEZ	2006	26	28051	1079
	Tai Seng Bavet SEZ	2007	17	7968	469
	Dragon King SEZ	2013	2	280	140
Sihanoukville	Sihanoukville SEZ 1	2009	2	424	212
	Sihanoukville SEZ 2	2008	40	8967	224
	Sihanoukville Port SEZ	2012	2	416	208
Poi Pet	Poi Pet O'Neang SEZ	2011	2	830	415
Koh Kong	Neang Kok Koh Kong SEZ	2005	4	3953	988
All			145	67889	468

SEZ= Special Economic Zone

Source: Council for the Development of Cambodia, Government of Cambodia.
<http://www.cambodiainvestment.gov.kh/list-of-sez.html>

At least 95 percent of production workers employed in the SEZs were women. The ages of production workers were generally 18 to 30, and their home bases were mostly the outlying provinces of Cambodia. By Cambodian standards, employment conditions in the SEZs seemed relatively good. But wages paid was never more than the legal minimum wage without counting prescribed transport and lunch allowances. The legal minimum wage in Cambodia was \$100 per month, plus legally mandated lunch and transport allowances, making a total of about \$145 per month, plus payment for any overtime, leading to average total wage between \$160 and \$180 per month, indicating thereby the low labor costs in Cambodia (Warr & Menon, 2015).

The government's purpose in establishing SEZs was to promote diversification of the

industrial base beyond electronics, to establish economic linkages between urban and rural areas and to promote industrial investment outside Phnom Penh (World Bank, 2012). According to Warr and Menon (2015), Cambodia's SEZs were almost entirely privately owned and managed. During October-November 2014, in the four locations of SEZs covering 58 firms, 99 percent of the total products of the surveyed firms were exported, and 87 percent of their total inputs were imported. The main exceptions were found in the footwear industry, where almost half of the intermediate inputs used were local. The firms in the SEZs had the global supply chain of 85 percent. This indicated that the SEZ firms were integrated with global markets but not well integrated with the Cambodian economy (Table 2).

Table 2: Exports, Imports and Global Supply Chain of the Selected Firms in Four SEZs

Location/Products	No. of Respondent Firms	Percentage of Sales that are Direct Exports	Part of Global Supply Chain (%)	Percentage of Inputs that are Imported
Location				
Phnom Penh	11	100	73	92
Bavet	18	97	89	86
Sihanoukville	28	100	86	85
Poipet	1	100	100	100
Products				
Footwear	7	100	57	56
Garments	14	96	100	95
Home furnishings	14	100	93	89
Light machinery	7	100	71	83
Luggage and bags	5	100	100	90
Other light mfg.	11	100	82	92
All respondent firms	58	99	85	87

Source: Survey of SEZ firms by ADB, October-November 2014.

All the firms in the SEZs were owned by foreign investors. They invested in Cambodia, more particularly in the SEZs, because of better investment conditions, political stability, investment incentives, tax exemptions, young and cost-effective workforce, quota free, rare application of anti-dumping and protective tariffs, low minimum capital requirement for business, and low rate of taxes. The reasons such as cost effectiveness of land with the rights to manage, mortgage and transfer, supports for registration, import/export permit, customs clearance, and support for worker's recruitment and administrative management, and particularly one-stop-office with CAMCONTROL and the direct supports of the representatives of the line ministries inside the SEZs, were also responsible for the foreign companies to invest in the SEZs. The foreign companies were found to be importing all kinds of raw-materials such as machines, textiles, plastic, steel, carton paper, construction materials and electricity materials from abroad. There were significant increases in the number of employees and amount of exports of the SEZs. The SEZs contributed a lot in the improvement of the standard of living of the villagers living in the surrounding villages (Narin, 2015).

Cambodia's special economic zones (SEZs) were attracting new investments that enabled the country to participate in global value chains (GVCs). The zones were still small, but held great potential. In a poor country like Cambodia, SEZs contributed primarily through employment creation, and they had the potential to increase this contribution. Even though SEZ firms were so far not closely linked to domestic firms within Cambodia, SEZs might have a significant demonstration effect. By showing that manufacturing investment could be successful, beyond the trade preference-driven labor-intensive garments sector that dominated manufacturing in Cambodia, the development of SEZs indirectly

promoted foreign direct investment outside the zones. It was found that the SEZs had attracted significant levels of foreign investment into Cambodia that would not have been present otherwise. These investments had created around 68,000 jobs, with equal or better pay and better prospects than the alternatives that would otherwise have existed, raising the economic welfare of the workers concerned. An interesting feature of the Cambodian SEZ policy was that government had left the establishment and management of the zones to private sector developers. This had avoided the large and sometimes wasteful public sector set up costs associated with SEZ establishment in many other countries. It also introduced greater market disciplines into the running and management of the SEZs, adding to their long-term viability (Warr & Menon, 2015).

The study done by Warr and Menon (2015) reveals that the firms operating in the SEZs in Cambodia did not contribute in technology transfer as their technology tended either to be low level or purchased on license from elsewhere. The firms invested less in research and development than non-SEZ firms. It was not very much clear that the SEZ firms offered more benefit in skills formation than those outside the zones. Backward and forward linkages of the SEZ firms were very small because these firms imported most of their inputs and exported most of their outputs, and they were linked to the international economy but not to the domestic economy. The "one-stop" administrative service provided at the SEZ was not very much helpful as many firms mentioned that though the "one-stop" facility did reduce regulatory compliance costs, but was not enough to satisfy firm managers. Further, the productivity of the Cambodian workers was not satisfactory, and they needed higher levels of training and longer periods of adjustment to reach to the levels of high productive workers seen in the neighboring countries Thailand and Viet Nam. Since the

average standard of literacy of the workers was not high, they were employed only in the most routine manual operations. The firms in the SEZs faced a lot of difficulty in recruiting the new staff because of high worker turnover. The labor market appeared to be geographically segmented, with limited rural–urban migration. The firms also did not offer wages and bonuses higher than the legal minimum to attract workers. In most interactions, government officials asked for additional benefits. Electricity cost was a frequent source of complaint and accounts for an average of around one-fourth of variable cost. The firms in the SEZs were required to install expensive backup generators using diesel power because of frequent interruptions of electricity supplies. In some locations, there were problems of water quality and waste disposal. Moreover, multiple shifts of work are not found in the firms, and because of this, there were low absorption of workers by the firms and inefficient use of the factory's fixed investments.

Narin (2015) found a number of challenges faced by the firms in the SEZs. Those were high employee turnover, shortage of employees, difficulty in selection and recruitment of staff due to small number of applicants, improper work environment, inadequate benefits, lack of skilled workforce, limited skills and experiences of government officials in supporting investors, and lack of adequate support by representatives of line ministries and one-stop-service (OSS) center inside the SEZs.

7. Conclusion

A special economic zone (SEZ) is a geographical region within a nation/state in which a distinct legal framework provides for more liberal economic policies and governance arrangements. Large number of countries have adapted SEZ as a popular means to foster and

stimulate economic development. The zones are named in various forms such as free trade zones, export processing zones, enterprise zones, single factory EPZs, free-ports and specialized zones. The policy package of the SEZ includes import and export duty exemptions, streamlined customs and administrative controls and procedures, liberal foreign exchange policies, income tax incentives to boost investment's competitiveness, and reduce business entry and operating costs and lenient immigration laws. Wide variations in the relative success of SEZs in achieving economic growth were observed in different countries, and there were both positive and negative spillover effects of these zones. The positive spillover effects were enhancement of foreign and domestic investment, generation of employment, increase in income, reduction of poverty, stimulation of economy through backward and forward linkages, promotion of export growth, facilitation of economic liberation, boosting of the development of improved technologies and infrastructure, enhancement of trade efficiency and manufacturing competitiveness, transfer of technology and skills, industrial upgrading, increase in factor productivity, increase in foreign exchange earnings and increase in government revenues. Negative spillover effects such as exploitation of women by paying lower wage, lack of training or skill upgrading and use of trainees to lower wage costs, suppression of labor standards and core labor rights including trade unionization, poor employment conditions, rare technological spillovers and no strict environmental standards were observed. Some studies found that enterprise zone programs had no significant effect on employment growth, increase in per capita income and poverty reduction. Finally, the difference between benefits and costs of SEZs was found to be marginal.

The special economic zone scheme was introduced in Cambodia in 2005 for the country's economic development because they can bring infrastructure, jobs, skills, enhanced productivity and the prospect of poverty reduction. The Royal Government of Cambodia had approved 38 special economic zones out of which nine were functional by 2014. All the firms in the SEZs were owned by foreign investors. There were significant increases in the number of employees, amount of exports of the SEZs and foreign investment. The zones were found to have significant contribution in the improvement of the standard of living of the villagers living in the surrounding areas. The firms operating in the SEZs in Cambodia had no contribution in technology transfer, little investment in research and development, meagre backward and forward linkages, and business link only with the international economy. They had also faced the problems of high electricity cost, low labor productivity, high worker turnover and poor water quality and waste disposal.

Both positive and negative effects of special economic zones were observed in the different countries. The positive spillover effects of special economic zones were found to be large, and experienced in many countries of the world. Negative or no spillover effects of some special economic zones were seen in some countries. This might be due to administrative and policy factors of governments. In Cambodia, the SEZs had contributed significantly in terms of employment creation, increase in foreign investment and increase in exports. But the problems such as low productivity of workers, high worker turnover, high electricity cost, negligible backward and forward linkages and no technology transfer were seen in the special economic zones in the country. The line ministries of the government of Cambodia should look to the problems of the zones and take immediate actions to solve the problems so that the SEZs would help

significantly in boosting the economic development of the country.

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Challenges Faced by Micro and Small Enterprises: A Case Study of Svay Rieng Province, Cambodia

Sam Ath Houy*

ABSTRACT

Micro and small enterprises (MSEs) are touted as economic engine for many countries in terms of economic growth, employment and stimulating investments. This study is to find out the challenges faced by MSEs that affect their performance in Cambodia. To carry out the present study, all the registered MSEs in the Svay Rieng Provincial Department of Industry and Handicraft were taken into account. Factors, i.e., working space factor, technological factor, marketing factor, managerial factor, financial factor, entrepreneurial factor, politico-legal factor, and infrastructural factor were considered as the challenging factors for the enterprises. The empirical results of the study show that the above challenging factors were responsible for considerable variation in MSEs' performance. The study recommends that the owners and managers of MSEs should adopt suitable strategies that could remove the challenges faced by them leading to improvement of the performance of their enterprises.

Keywords: Challenge; MSEs; Performance

1. Introduction

Micro and small enterprises (MSEs) are touted as economic engine for many countries in terms of economic growth, employment and stimulating investments. The MSEs sector contributes in manufacturing output, creating employment and enhancing exports. It plays a key role in the development of the economy with effective, efficient, flexible and innovative entrepreneurial spirit (Mehta, 2013).

In developing countries, the MSEs sector is a large source of employment and income, particularly for the urban population. The employment in MSEs, outside of agriculture, is defined as employment that comprises of both

self-employment and wage employment without secured contracts, worker benefits, or social protection and represents nearly half or more of the total nonagricultural employment in all regions of the developing world. It remains doubtful that despite the role played by the MSEs sector and the support, the high failure rates of MSEs can be attributed to the challenges faced by these small businesses and also lack of support from key stakeholders. The major problems of MSEs in Addis Ababa were lack of business plan, lack of formal and informal association, lack of favorable business environment, high cost and shortage of raw materials, lack of proper institutional support, lack of proper marketing practice, and stiff competition among MSEs in the same business

* Research Scholar, Build Bright University, Cambodia. E-mail: houysamath@sru.edu.kh

line, and medium and large companies (Mezgebe, 2012).

Agwu and Emeti (2014) found that poor financing, inadequate social infrastructures, lack of managerial skills and multiple taxation were major challenges confronting SMEs in Port-Harcourt City. According to Kazimoto (2014), mentioned that SMEs faced challenges to access international marketing due to unawareness of regulations and standards, lack of financial support from the government, poor understanding of consumers' needs and services, lack of essential entrepreneurial skills and weak networking structures to penetrate into international marketing.

Brian and Shingirayi (2014) found the challenges faced by small to medium scale enterprises in Chitungwiza, Zimbabwe using data from 2010-2012. The study was confined to Chitungwiza area where a sample of 100 SMEs was adopted. From the research findings, it emerged that SMEs were not getting enough financial support from the financial institutions.

Christina et al. (2014) did a study on the challenges and barriers encountered by the SMEs owners, in Muscat with data sample size of 35 SME owners and the data were collected with the help of structured questionnaire. The data were further analyzed by using descriptive statistics and ANOVA and represented through tables. It was found that the majority of SMEs faced challenges in the form of policy and administrative challenges followed by the marketing and financial issues.

Tinarwo (2016) studied the challenges which were faced by the small and medium enterprises that hindered their performance and limited their growth. The study was relied upon small to medium enterprises (SMEs) which were operating at Gazaland Market. It revealed the major challenges hampering the growth of

SMEs at Gazaland Market, and the challenges were lack of markets, lack of government support, unfair treatment from the local authority, stiff competition due to cheap imports, finance and lack of training as well as technology.

Agwu and Emeti (2014) discussed issues, challenges and prospects of small and medium scale enterprises in Port-Harcourt city, Nigeria. The paper adopted a descriptive research design using 120 randomly selected registered operators of SMEs in Port-Harcourt city. Data collected were analyzed using descriptive statistics while formulated hypotheses were tested using z-test. Results from the data analysis indicated that poor financing, inadequate social infrastructures, lack of managerial skills and multiple taxation were major challenges confronting SMEs in Port-Harcourt city.

Effective support can only be rendered to these business owners and managers only if the prospective support providers have a clear understanding of the challenges faced by MSEs. There is a need for solutions to reduce the continuing high failure and underperformance rates in the MSEs sector for the country to reap some of the benefits that come as a result of having an effective MSE sector.

In Cambodia, SMEs are highly prioritized as the country embarks on the Government Rectangular Strategy and the National Strategic Development Plan of becoming a country with high income and high-productivity, which can be realized by providing conducive environment for developing SMEs as the engine of growth and innovation through many policies. According to the statistics from Economic Census of Cambodia (2011), SMEs constituted 97.3 percent of Cambodia's total business establishments, employing about 52.7 percent

of the total workforce and contributing 32.5 percent of the Gross Domestic Product (GDP) of Cambodia.

2. Objectives

In rural Cambodia, MSEs create a large number of non-farm employment and income opportunities for the people. It has been felt that individuals have been able to develop their own microenterprises that help not only just a livelihood for themselves and their families, but also to create employment opportunities for other members in their communities. However, the performance of rural enterprises is often highly correlated with several challenges, which are related to their personal qualities and integrated management of the firm in the context of a dynamic and competitive business environment. It is, therefore, important to investigate and propose solutions to these challenges. Thus, the objectives of this study are to: 1) investigate the challenges faced by owners of MSEs in the Svay Rieng province, Cambodia, and 2) suggest solutions to the identified challenges.

3. Data and Methodology

Cambodia presently has 25 provinces including the capital city of Phnom Penh. In this study, Svay Rieng province has been randomly selected. The province has its proximity to the border of Vietnam where great potential for business development exists. In addition, with its geographic advantages, the government has promoted industrialization through the establishment of four Special Economic Zones (SEZs). The economy of Svay Rieng province is based on agricultural farming, horticulture, fishery, garment production, etc., and in the recent past, a number of micro and small enterprises have come up in the province. However, due to either the absence of studies or limited studies, it is unknown the extent of challenges faced by the owners of enterprises.

Thus, in this context, the study has been undertaken at a micro level.

For the purpose of the study, all the 60 registered micro and small enterprises in the Provincial Department of Industry and Handicraft were taken into consideration. These enterprises were spread across the two cities and six districts of the province. In order to find out the challenges faced by the MSEs, the factors, i.e., working space factors, technological factors, marketing factors, managerial factors, financial factors, entrepreneurial factors, politico-legal factors and infrastructural factors were taken into consideration.

4. Results and Discussions

Among the 60 registered MSEs, around 42 percent were less than five years old, and 80 percent had employed up to six persons on an average to work in their enterprises. Besides, the highest percentage, i.e., 53 percent MSEs, was found to be engaged in family business. While around 33 percent SMEs were engaged in the food, beverage and tobacco business, the non-metallic mineral and basic metal category enterprises were around 27 percent. Moreover, 77 percent MSEs were less technologically advanced, and around 88 percent of them did not have any business plan. Major constraints that affect the performance of MSEs were associated with different factors. The descriptive statistics were calculated to explain the constraints that affected the performance of MSEs. The measures of central tendency (mean and mode) and dispersions (standard deviation) were calculated for different constraint factors, and are shown in the tables under different constraint factors.

Working Space Factor

The table given below reveals that the rent of house was too high with mean score of 4.68 and

standard deviation of 0.504. Therefore, it may be said that the rent of house too high was the main constraint that affected the performance of MSEs. This was followed by average score of the respondents' response with regard to absence of own premise, which accounted for mean score of 4.08 and standard deviation of

0.645. The last constraint of the internal working space factor was inconvenient current working place, which accounted for mean score of 3.87 with standard deviation of 0.724. It was the third main constraint of the working space factor (Table 1).

Table 1: Views of MSEs as per the Internal Constraint of Working Space Factor Affecting the Success

Description	Mean	Mode	St. Dev	SDA	DA	UD	AG	SAG	Total
Absence of own premises	4.08	4	0.645	0 0.0%	3 5.0%	1 1.7%	44 73.0%	12 20.0%	60 100%
Current working place is not convenient	3.87	4	0.724	0 0.0%	6 10.0%	2 3.3%	46 76.7%	6 10.0%	60 100%
The rent of house is too high	4.68	5	0.504	0 0.0%	0 0.0%	1 1.7%	17 28.3%	42 70.0%	60 100%

Note: SDA = Strongly Disagreed; DA = Disagreed; UD = Undecided; AG = Agreed; and SAG = Strongly Agreed

Source: Field Survey, 2015.

Technological Factor

The lack of appropriate machinery and equipment was the main constraint of MSEs' internal technical factor, which can be revealed from its mean score of 3.15 and standard deviation of 1.132. This was followed by lack of money to acquire new technology, and the

mean score and standard deviation were 2.9 and 1.145 respectively. Further, the lack of skills to handle new technology and unable to select proper technology had affected the MSEs' performance to some extent (Table 2).

Table 2: Views of MSEs as per the Internal Constraint of Technological Factors Affecting the Success

Description	Mean	Mode	St. Dev	SDA	DA	UD	AG	SAG	Total
Lack of appropriate machinery and equipment	3.15	2	1.132	0 0.0%	27 45.0%	4 6.7%	22 36.7%	7 11.7%	60 100%
Lack of skills to handle new technology	2.72	2	1.091	1 1.7%	39 65.0%	0 0.0%	16 26.7%	4 6.7%	60 100%
Lack of money to acquire new technology	2.9	2	1.145	1 1.7%	34 56.7%	0 0.0%	20 33.3%	5 8.3%	60 100%
Unable to select proper technology	2.67	2	1.115	5 8.3%	33 55.0%	1 1.7%	19 31.7%	2 3.3%	60 100%

Note: SDA = Strongly Disagreed; DA = Disagreed; UD = Undecided; AG = Agreed; and SAG = Strongly Agreed

Source: Field Survey, 2015.

Marketing Factor

The internal constraints of marketing factor of the MSEs were classified into five types. Poor customer relationship and handling, and difficulty in searching new market were the main internal constraints of marketing factor that had affected the performance of MSEs in the study area. The mean scores and standard deviations clearly showed the respondents' views on the above two constraints. The mean scores of the above two marketing constraints

were 3.78 and 3.27 with standard deviations of 0.922 and 1.103 respectively. The table below shows that the respondents' views on lack of promotion to attract potential users, lack of demand forecasting and absence of relationship with marketing research organizations affecting MSEs performance with mean score of 2.43, 2.37 and 1.77 and standard deviations of 0.998, 0.92 and 0.851 respectively (Table 3).

Table 3: Views of MSEs as per the Internal Constraint of Marketing Factors Affecting the Success

Description	Mean	Mode	St. Dev	SDA	DA	UD	AG	SAG	Total
Searching new market is so difficult	3.27	4	1.103	1 1.7%	22 36.7%	2 3.3%	30 50.0%	5 8.3%	60 100%
Lack of demand forecasting	2.37	2	0.92	6 10%	37 61.7%	7 1.7%	9 15.0%	1 1.7%	60 100%
Absence of relationship with marketing research organization	1.77	2	0.851	24 40%	30 50%	4 6.7%	2 3.3%	2 3.3%	60 100%
Lack of promotion to attract potential users	2.43	2	0.998	4 6.7%	42 70%	0 0.0%	12 20.0%	2 3.3%	60 100%
Poor customer relationship and handling	3.78	4	0.922	0 0.0%	11 18.3%	0 0.0%	40 66.7%	9 15.0%	60 100%

Note: SDA = Strongly Disagreed; DA = Disagreed; UD = Undecided; AG = Agreed; and SAG = Strongly Agreed

Source: Field Survey, 2015.

Managerial Factor

The internal constraints of managerial factor with regard to lack of low cost and accessibility to training facilities indicated the main problems that hindered the success of MSEs. It showed the mean score of 3.87 with standard deviation of 0.812. This was followed by the second main constraint, i.e., poor organization and ineffective communication with the mean

score of 3.32 and standard deviation of 0.948. On the other hand, the poor selection of associates in business and lack of well-trained and experienced employees were closely deviated to undecided, followed by lack of clear duties and responsibility among employees and lack of strategic business planning as viewed by the MSEs (Table 4).

Table 4: Views of MSEs as per the Internal Constraint of Managerial Factors Affecting the Success

Description	Mean	Mode	St. Dev	SDA	DA	UD	AG	SAG	Total
Lack of clear duties and responsibility among employees	2.82	2	1.112	4 6.7%	30 50.0%	0 0.0%	25 41.7%	1 1.7%	60 100%
Poor organization and ineffective communication	3.32	4	0.948	19 31.7%	4 6.7%	0 0.0%	36 60.0%	1 1.7%	60 100%
Poor selection of associates in business	2.95	2	1.141	1 1.7%	32 53.3%	1 1.7%	21 35.0%	5 8.3%	60 100%
Lack of well trained and experienced employees	2.9	2	1.1	1 1.7%	33 55.0%	0 0.0%	23 38.3%	3 5.0%	60 100%
Lack of low cost and accessible training facilities	3.87	4	0.812	1 1.7%	6 10.0%	0 0.0%	46 76.7%	7 11.7%	60 100%
Lack of strategic business planning	2.53	2	1.016	2 3.3%	42 70.0%	1 1.7%	12 20.0%	3 5.0%	60 100%

Note: SDA = Strongly Disagreed; DA = Disagreed; UD = Undecided; AG = Agreed; and
SAG = Strongly Agreed

Source: Field Survey, 2015.

Financial Factor

The mean scores of 3.83 and 3.82 with standard deviations of 0.96 and 0.833 of respective constraints, i.e., shortage of working capital and lack of cash management skills revealed the main constraint elements of internal constraints of financial factor. The respondents who had the opinion of shortage of working capital and lack of cash management skills responded agreement with little deviations

among them. By the same token, respondents of the MSEs responded undecided with little deviation to inadequacy of credit institutions, high collateral requirement from lending institutions and banks, and complexity of loan application procedures. This was validated by the mean scores of 2.73, 2.35 and 2.15 with standard deviations of 1.071, 0.755 and 0.755 respectively (Table 5).

Table 5: Views of MSEs as per the Internal Constraint of Financial Factors Affecting the Success

Description	Mean	Mode	St. Dev	SDA	DA	UD	AG	SAG	Total
Inadequacy of credit institutions	2.73	2	1.071	2 3.3%	36 60.0%	0 0.0%	20 33.3%	2 3.3%	60 100%
Lack of cash management skills	3.82	4	0.833	1 1.7%	7 11.7%	0 0.0%	46 76.7%	6 10.0%	60 100%
Shortage of working capital	3.83	4	0.96	2 3.3%	6 10.0%	3 5.0%	38 63.3%	11 18.3%	60 100%
High collateral requirement from lending institutions and banks	2.35	2	0.755	3 5.0%	46 76.7%	1 1.7%	7 11.7%	3 5.0%	60 100%
Loan application procedures are too complicated	2.15	2	0.755	4 6.7%	50 83.3%	1 1.7%	3 5.0%	2 3.3%	60 100%

Note: SDA = Strongly Disagreed; DA = Disagreed; UD = Undecided; AG = Agreed; and
SAG = Strongly Agreed

Source: Field Survey, 2015.

Entrepreneurial Factor

Among the internal constraints of entrepreneurial factor, lack of tolerance to work hard scored the highest mean of 4.08 with standard deviation of 0.591. The second and third constraints that affected the performance of MSEs were lack of motivation and drive and lack of persistence and courage for one failure.

Their respective mean scores were 3.18 and 2.98 with standard deviation of 1.081 each. The less important constraints relating to entrepreneurial factor were lack of entrepreneurship training and lack of information to exploit business opportunities (Table 6).

Table 6: Views of MSEs as per the Internal Constraint of Entrepreneurial Factors Affecting the Success

Description	Mean	Mode	St. Dev	SDA	DA	UD	AG	SAG	Total
Lack of motivation and drive	3.18	4	1.081	1 1.7%	24 40.0%	1 1.7%	31 51.7%	3 5.0%	60 100%
Lack of tolerance to work hard	4.08	4	0.591	0 0.0%	2 3.3%	2 3.3%	45 75.0%	11 18.3%	60 100%
Lack of persistence and courage for one failure	2.98	2	1.081	0 0.0%	31 51.7%	3 5.0%	22 36.7%	4 6.7%	60 100%
Lack of entrepreneurship training	2.47	2	1.081	3 5.0%	44 73.3%	1 1.7%	6 10.0%	6 10.0%	60 100%
Lack of information to exploit business opportunities	2.47	2	0.982	3 5.0%	42 70.0%	1 1.7%	12 20.0%	2 3.3%	60 100%

Note: SDA = Strongly Disagreed; DA = Disagreed; UD = Undecided; AG = Agreed; and
SAG = Strongly Agreed
Source: Field Survey, 2015.

Politico-legal Factor

The table below shows the agreement of the MSEs on the unreasonable tax rate which was validated by the mean score of 3.92 with standard deviation of 0.743. This was the highest mean score among all the politico-legal constraints. Therefore, it can be said that unreasonable tax rate was the main constraint that affected the MSEs' performance in all sectors. Conversely, the table indicates that the

respondents were neither disagreed nor undecided with regard to the constraints such as lack of government support, lack of accessible information, bureaucracy in registration and licensing and political intervention. The mean scores of these constraints were 2.73, 2.7, 2.53 and 2.22 with standard deviations of 1.133, 1.03, 0.982 and 1.059 respectively (Table 7).

Table 7: Views of MSEs as per the External Constraint of Politico-Legal Factors Affecting the Success

Description	Mean	Mode	St. Dev	SDA	DA	UD	AG	SAG	Total
The tax levied on my business is not reasonable	3.92	4	0.743	0 0.0%	6 10.0%	1 1.7%	45 75.0%	8 13.3%	60 100%
Bureaucracy in company registration and licensing	2.7	2	1.03	2 3.3%	35 58.3%	4 6.7%	17 28.3%	2 3.3%	60 100%
Lack of government support	2.73	2	1.133	3 5.0%	35 58.3%	1 1.7%	17 28.3%	4 6.7%	60 100%
Political intervention	2.22	2	1.059	16 26.7%	26 43.3%	8 13.3%	9 15.0%	1 1.7%	60 100%
Lack of accessible information relevant to my business	2.53	2	0.982	2 3.3%	41 68.3%	2 3.3%	13 21.7%	2 3.3%	60 100%

Note: SDA = Strongly Disagreed; DA = Disagreed; UD = Undecided; AG = Agreed; and

SAG = Strongly Agreed

Source: Field Survey, 2015.

Infrastructural Factor

The result presented in the below table shows that power interruption was the main problem followed by lack of sufficient and quick transportation service and lack of appropriate dry waste and sewerage system that hindered the business performance of MSEs. The mean score of power interruption was 4.33 with standard deviation of 1.052 and The mean scores of lack of sufficient and quick transportation service and lack of appropriate

dry waste and sewerage system were 2.85 and 2.83 with the standard deviations of 1.039 and 1.107 respectively. On the other hand, insufficient and interrupted water supply, and lack of business development services were the fourth and fifth constraints that hindered the MSEs' performance. The above mean scores of the two constraints were 2.45 and 2.17 with standard deviations of 1.199 and 0.763 respectively (Table 8).

Table 8: Views of MSEs as per the External Constraint of Infrastructural Factors Affecting the Success

Description	Mean	Mode	St. Dev	SDA	DA	UD	AG	SAG	Total
Power interruptions	4.33	5	1.052	0 0.0%	8 13.3%	2 3.3%	12 20.0%	38 63.3%	60 100%
Insufficient and interrupted water supply	2.45	2	1.199	5 8.3%	43 71.7%	2 3.3%	0 0.0%	10 16.7%	60 100%
Lack of business development services	2.17	2	0.763	5 8.3%	47 78.3%	2 3.3%	5 8.3%	1 1.7%	60 100%
Lack of sufficient and quick transportation service	2.85	2	1.039	1 1.7%	33 55.0%	1 1.7%	24 40.0%	1 1.7%	60 100%
Lack of appropriate dry waste and sewerage system	2.83	2	1.107	0 0.0%	37 61.7%	1 1.7%	17 28.3%	5 8.3%	60 100%

Note: SDA = Strongly Disagreed; DA = Disagreed; UD = Undecided; AG = Agreed; and

SAG = Strongly Agreed

Source: Field Survey, 2015.

Marketing Factor

As shown in the table below, inadequate market for the product was the most important external constraint of marketing factor constraint, and the mean score and standard deviation clearly show respondents' agreement on the constraint. The mean score was found to

be 3.2 with standard deviation of 1.022. The next major constraint of marketing factor was lack of market information, and its mean score was 2.55 with standard deviation of 0.99 (Table 9).

Table 9: Views of MSEs as per the External Constraint of Marketing Factors Affecting the Success

Description	Mean	Mode	St. Dev	SDA	DA	UD	AG	SAG	Total
Inadequate market for my product	3.2	4	1.022	1 1.7%	22 36.7%	2 3.3%	34 56.7%	1 1.7%	60 100%
Lack of market information	2.55	2	0.99	3 5.0%	38 63.3%	4 6.7%	13 21.7%	2 3.3%	60 100%

Note: SDA = Strongly Disagreed; DA = Disagreed; UD = Undecided; AG = Agreed; and SAG = Strongly Agreed

Source: Field Survey, 2015.

5. Conclusion

The present research addressed challenges faced by micro and small enterprises, which influence firm performance. The study found the factors such as working space, technology, marketing, management, finance, entrepreneur, politic and law and infrastructure hindered the MSEs performance. The empirical evidence reveals that both internal and external constraints significantly of different factors influenced the performance of the micro and small enterprises in the study area. The findings of the study would have implications for practitioners, especially, owners and managers of MSEs in ensuring a better performance of their enterprises by developing appropriate strategies in the competitive market.

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Sustainability of Electricity Sector: Empowering the DISCOMs and Consumers in the Indian Context

Bindu Madhab Panda *

ABSTRACT

This article discusses the main issues in the electricity distribution, that specifically relates to electricity theft and misuse, inefficiency of collection, increasing operational cost and low purchasing power of Electricity Distribution Companies (DISCOMs) of India, and suggests a permanent measure, that focuses on the implementation of prepaid tariff in electricity distribution, to overcome the concerns in India. The paper draws attention on international practices, feasibility and benefits of adopting prepaid tariff in electricity distribution and suggests ways for its implementation across the country. Prepaid tariff in electricity distribution would be a phase of transformation for the entire electricity sector. Taking such a revolutionary step towards empowering DISCOMs and consumers would automatically empower electricity generation and transmission in the country.

Keywords: *Prepaid tariff in electricity distribution; prepaid metering; electricity distribution companies (DISCOMs)*

1. Introduction

The Indian electricity sector has witnessed tremendous growth in its demand, generation capacity, transmission and distribution networks. The installed generation capacity of the country has increased to 3.45 lakh MW in 2017 from 1.05 lakh MW in 2001, the growth registered 3.29 folds in the last 17 years. The country has registered 2.32 folds growth in electricity generation during this 17 year period: generation increased from 517 BUs in 2001-02 to 1202 BUs in 2017-18.¹ Total electricity generation is significantly below the installed capacity leading to huge capacity surplus which shows a perennial underutilisation of capacity. This is primarily because about 30 crore people are without access to electricity and undersupply of electricity to the connected households. This in turn reflects that the country has to go a long way on securing its objective of energy security.

Nevertheless, the sincere effort of the Government has brought a dramatic change by electrifying 100 percent villages, i.e., 5.97 lakh census villages by the end of July 2018 (Central Electricity Authority, 2017). The per capita consumption of electricity has increased to 1075 Kwh in 2015-16 compared to 559 Kwh in 2001-02.² In the World Bank's electricity accessibility ranking, India has improved its rank to 26th position in 2017 compared to 99th in 2014, and with such a tremendous growth, power deficit has drastically come down in last three years and India has become an energy surplus for the first time in the history (World Bank, 2017).

Given the trends in population growth, industrialisation, urbanisation, modernisation, increase in per capita income and extension of connectivity to the households, electricity

* Former Asst. Chief (Economics), Central Electricity Regulatory Commission, New Delhi, and presently posted in NITI Aayog, Government of India, New Delhi. E-mail: bm.panda@nic.in

consumption is expected to further increase substantially in the coming years. However, poor purchasing power or financial health of DISCOMs may not be able to drive the electricity demand primarily due to the following reasons as discussed below under this section:

The average cost of electricity supply has increased significantly to Rs.5.20/kwh in 2014-15 from Rs.2.46/kwh in 2001-02, while the average revenue realisation (without subsidy) increased to Rs.4.12/kwh in 2014-15 from Rs.1.81/kwh in 2001-02. As a result, the gap (difference between average cost of supply and average revenue realisation) has increased to Rs.1.08/kwh in 2014-15 from Rs.0.65/kwh in 2001-02. The DISCOMs in the Eastern and Western regions have lower gap, while north-east, north and south have higher gap than the national average in 2014-15 (Power Finance Corporation Limited, n.d.).

The total capital employed in the electricity distribution (excluding net worth prior to 2001-02 for Power Departments) recorded insufficient and witnessed slow growth: total capital employed recorded Rs.5.04 lakh crore as on March 31, 2013 increased to Rs.5.64 lakh crore as on March 31, 2014 and further to Rs.6.32 lakh crore as on March 31, 2015. The share of borrowings from financial institutions, banks and markets in the total capital employed increased from 91 percent in 2012-13 to 96 percent in 2014-15. Utilities are relying more on market resources for their capital needs rather than on state government and consumers: state government loans constituted around nine percent of the total capital employed in 2014-15 while revenue collected from the consumers was only 6.4 percent of the total capital employed during the corresponding period (ibid).

The aggregate book losses excluding subsidy (on accrual basis) of all the state DISCOMs

registered at Rs. 63,355 crore that was 15.9 percent of aggregate revenue of the DISCOMs in 2014-15. However, the states like Maharashtra, Delhi, Gujarat, West Bengal, Karnataka, Puducherry and Punjab had earned a profit during the corresponding year. Net worth of the DISCOMs continued to be negative, and was recorded at Rs.1.17 lakh crore as on March 31, 2015. The negative net worth was primarily accounted due to Rs.4.06 lakh crore of accumulated losses as on 2014-15. This has in turn lead to increase in total outstanding loans for all DISCOMs from Rs.5.88 lakh crore as on March 31, 2014 to Rs.6.73 lakh crore as on March 31, 2015 (ibid).

Due to heavy losses in the electricity distribution, the distribution sector became unviable, and the private investors have withdrawn their participation from the electricity distribution. As a result, private investment in electricity distribution declined to Rs.1398 crore in 2014-15 from Rs.2886 crore in 2009-10³. But for the participation of private sector, the holistic purpose of electricity distribution for 24*7 may not be successful and the true spirit and benefit of Electricity Act, 2003⁴ may remain a pipe dream.

2. Curbing Legacy of Electricity Distribution

The Indian electricity sector has moved a long way after the implementation of the Electricity Act, 2003 and witnessed tremendous improvement. Nevertheless, despite existing acts, regulations and policies, the entire sector (generation, transmission and distribution) has been undergoing through a plethora of serious problems that persists primarily due to the loss-making distribution sector. It is an admissible fact that with the improvement of the financial health of DISCOMs, the generation sector and transmission sector would bounce back their pace of growth.

The electricity distribution sector has experienced a number of serious problems albeit, high Aggregate Technical & Commercial (AT&C) losses, non-modernisation of DISCOMs, high operational cost, irregular revision and under-cost reflective tariff, etc. resulting in losses to DISCOMs and trapping them into debt burden. As measures were put in place to improve the health of DISCOMs by reducing interest burden, cost of power, power losses in distribution sector and improve their operational efficiency, the Union Government jointly with state governments has been implementing Ujwal DISCOM Assurance Yojna (UDAY): about 27 states/UTs have joined UDAY and almost 86 percent bonds have been issued to the DISCOMs by the end of October, 2017.⁵ It is expected that UDAY may help removed the legacy by breaking the vicious circle⁶ of operational losses and normalise the financial condition of DISCOMs for the short-run, however, there is an urgent need to boost the operation and purchasing power of the DISCOMs as a long-term measure.

The proposition of maintaining growth and stability in the power sector with a healthy distribution sector is like a general equilibrium condition where electricity generation, transmission, distribution and consumers are tied in a chain and interconnected on a single platform to attain the ultimate equilibrium. Any deviation that emerged out of the chain would disturb the stable equilibrium condition and can be outweighed by shouldering additional burden by any of the four aforementioned elements. DISCOMs in India are unable to bear the excess burden on account of their bad financial health, while generation and transmission sector pass through resource crunch fetching huge investment for capacity expansion. It is the ultimate consumers who are to shoulder the burden for their own and the

sector as a whole. Now the question is “who will bell the cat” and “how to bell the cat”?

Various studies including the World Bank report witnessed the experience gained from Africa, Europe and Asian countries that the poor financial health of the DISCOMs can be overcome by adopting prepaid tariff in electricity distribution with the use of smart meters. Moving towards prepaid electricity tariff would be immensely beneficial both for DISCOMs and consumers including low-income category. The studies highlighted that “many households struggle to pay their monthly electricity bills, making it difficult for utilities to sustainably supply them electricity (World Bank, 2016). Therefore, one possible strategy for overcoming this is to install prepaid electricity meter, which would provide consumers flexibility in timing of their electricity expenditures while also guaranteeing that utilities are paid for the electricity they supply”.

3. Global Scenario in Prepaid Metering in Electricity

Development of an integrated information technology enabled national electric power grid offers significant benefits supporting the expansion of electricity production and distribution, lowering costs, promoting energy efficiency, and improves reliability and security of electricity generation, transmission and distribution. The “smart grid” has emerged as an effective approach to aligning electricity supply with demand and reducing loss. Adoption of smart grid technology helps utilities to attain goals like (i) to better manage peak energy load; (ii) to better incorporate the intermittent power supply from renewable energy sources; and (iii) to facilitate consumers to control over household energy usage. In many countries, curtailing energy theft is another strong motivation for adopting smart grid technology, specifically the use of smart

electricity meters⁷. Smart electricity meters are of two types: Automatic Meter Reading (AMR) and Advanced Metering Infrastructure (AMI) that provide system operators an IT-enabled interface with consumers, distributors and generators in the electricity sector. AMR meters use one-way communication and primarily act as digital “meter readers,” while AMI meters can use two-way communication to transmit usage information and perform observation and maintenance tasks including prepayment (U.S. Department of Energy, 2012).

The prepayment technology was initially developed in South Africa in the late 1980s with the objective of supplying energy to a large number of low-income and geographically dispersed consumers. South Africa pioneered the use of prepaid electricity meters in 1992, as a cost-effective approach to provide electricity to very poor and rural households. The use is now widespread, even in affluent areas. Other African countries such as Sudan and Madagascar are following the South African success while Kenya started prepaid electricity metering in April 2009 on pilot basis and rollout the project in March 2011 (Mathenge, 2015). Even Uganda, where about 15 percent of the population is connected to the grid, is an early adopter of pre-paid meters. As a result, higher revenues helped the company to reach its goal of tripling the size of its distribution network to absorb additional power soon to be generated in Uganda (The Economist, 2016).

By the late 1990s, prepayment system in electricity was very popular in the United Kingdom and most of Europe have installed the prepaid meters. The concept of prepaid meters has found ground in Argentina and New Zealand, which was introduced in Argentina in 1993 (Casarin & Nicollier, 2009). Northern Ireland and North America have increased electricity prepayment meter enrolment and

installation significantly. Globally, more than 40 countries have implemented prepaid meters and the customers’ preference to use prepaid meters has increased substantially. Asian countries are currently looking to introduce prepaid electricity meters across their distribution network, buoyed up by the success experienced in South Africa. The existing inherent problems with the post-paid system and privatization of state held power distribution companies are the major driving factors for this market in Asia. Malaysia has started for prepaid electricity system, while countries such as Thailand, Bangladesh, Singapore, and Iran have been showing increased interest in adopting prepaid system (Srivatsan, 2004).

Smart meters in electricity were introduced in the United States and its market share grew in during the 1980s and 1990s. Many countries including the United States are primarily installing AMI smart meters and the demand for smart meters that specifically monitor electricity has experienced strong growth over the past five years. Several countries have enacted legislation mandating adoption of smart meters as part of a broader clean energy initiatives. In 2008, the United Kingdom mandated that 53 million smart electric and gas meters be deployed in homes and businesses by 2019. Further, the European Union has enacted a mandate that requires utilities in all of its member states to provide smart meters to 80 percent of their electricity consumers by 2020. In China, the government released its smart grid plan (Special Planning of 12th Five-Year Plan: 2011–15 on Smart Grid Major Science and Technology Industrialization Projects) in May 2012, calling for massive investment in smart grid technology. As part of the plan, the State Grid Corporation of China announced that it would deploy 300 million smart meters by 2015 and up to 380 million meters by 2020. Direct government funding of smart meter adoption has been more common than

legislative mandates, for example, the United States, under the American Recovery and Reinvestment Act-2009 funds, implemented smart metres or smart grid development project that played a significant role in the growth of the smart metering in the U.S. France has announced a program that would call for the installation of 3 million smart meters by 2016 through the national utility and scaling up to 35 million meters by 2020 (U.S. International Trade Commission, 2014).

4. Feasibility of Switching over to Prepaid Tariff in Electricity Distribution

The effort for the development and deployment of Smart Grids in India was implemented through the work of India Smart Grid Task Force (ISGTF) and India Smart Grid Forum (ISGF) since 2010 under the aegis of the Ministry of Power. A Smart Grid Vision and Roadmap for India was framed by the Ministry of Power in August 2013 which envisaged the launch of a National Smart Grid Mission (NSGM). Finally, the Ministry of Power established the NSGM to plan and monitor the implementation of policies and programs related to the smart grid activities in India in 2015, merging the role of *ISGTF* into NSGM.

The Government of India has been implementing 14 Smart Grid Pilot projects in the State utilities of Assam, Haryana, Himachal Pradesh, Karnataka (Mysore), Punjab, Telangana, Tripura, West Bengal, Puducherry, Gujarat, Uttar Pradesh (Kanpur), Chandigarh and Maharashtra. The indicative components of smart grids in the 12th Five Year Plan period also include “deployment of Smart Meters and Advanced Meter Infrastructure (AMI)”. The basic infrastructure smart grids are being created under Restructured Accelerated Power Development and Reforms Programme/ Integrated Power Development Scheme in large towns. Under the scheme, AMI will be implemented and all the consumer meters

being installed in these cities will preferably be Smart Meters and substation modernization. The mandate of UDAY was to install 3.5 crore smart meters (AMI) by 2019, and the target was assigned to states with the estimated cost of Rs.17150 crore (Ministry of Science and Technology, 2017). The Government of India is promoting deployment of Smart Grid projects under the NSGM through funding support of 30 percent on capital expenditure (Ministry of Power, n.d.).

The path for introduction of prepaid meters commenced with the implementation of the Electricity Act, 2003. In compliance with section 3 of the Electricity Act, 2003, the central government notifies the National Electricity Policy 2005 and National Tariff Policy 2006. The Section 5.4.9 of the National Electricity Policy stated that that “the State Electricity Regulatory Commissions should encourage use of pre-paid meters”, while the National Tariff Policy implied that the use of prepaid meters can also facilitate for transfer of subsidy to consumers. Clause 20 of Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 says about the adoption of new technologies– “The distribution licensee shall make out a plan for introduction and adoption of new technologies such as pre-paid meters, Time of the Day meters, automatic remote meter reading system through appropriate communication system with the approval of the appropriate commission or as per the regulations or directions of the appropriate commission or pursuant to the reforms programme of the appropriate government.” Although an evolution on prepaid meter came in India with the enactment of the Electricity Act followed by National Electricity Policy, Tariff Policy and CEA Regulations on “Installation and Operation of Meters”, prepaid tariff in electricity has not been implemented in India while it has been very popular and significantly growing globally in recent years.

Realising the high transmission and distribution loss and poor participation of private sector in electricity distribution, the State Electricity Regulatory Commissions of Delhi, Maharashtra, West Bengal, Bihar, Arunachal Pradesh, Chandigarh, Telangana, Haryana, Assam, Punjab, Tripura, Puducherry, Gujarat, etc have approved the installation of smart card operated prepaid electricity meters. The implementation has not been expedited. With the delay in implementation, not only DISCOMs but also consumers are adversely affected.

Lifestyle of the consumers has been changing with the changes in their per capita income and preferences. The per capita Net National Income (NNI) of the country has increased to Rs. 94,130 in 2015-16 from Rs. 8,106 in 1993-94⁸, while population living below the poverty line has declined to 22 percent in 2011-12 from 45 percent in 1993-94⁹. The per capita average monthly household consumption expenditure has also increased to Rs.1430 (Rural) and Rs.2630 (Urban) in July 2011-June 2012 from Rs.281 (Rural) and Rs.458 (Urban) in 1993-94.¹⁰ With the decline in poverty and increase in per capita income, purchasing power of the people have increased over the years and people have shifted their pattern of consumption expenditure to essential items like electricity, telephone, internet, DTH/cable, etc.: the total number of telephone subscribers (Wireless+ Wireline) in India significantly escalated to more than 121 crore as on July, 2017 with the tele-density of 94 percent¹¹; over 46 crore people have been using internet (as on 30th June, 2017)¹²; over 18 crore households have been using TVs (DTH or cable) as on March, 2017¹³; It is worth mentioning that electricity is the pre-requisite for the use of telephone, TVs, internet, and to infer that people, especially poor are ready to move towards prepaid electricity system to have a control over electricity consumption and expenditure. Besides, electricity is an essential

good in the regulated sector, and its demand for consumption is price and income inelastic, and hence inevitable for the social and economic development in the country.

High loss in Indian electricity distribution network has always been a concern for entire electricity sector including the electricity consumers, mainly due to electricity theft, irregular and inadequate revision of electricity tariff, use of traditional meters, irregular bill payment, etc. This became a major hindrance for the progress towards universal access to electricity and improving the performance of utilities¹⁴. Such problems can be overcome by adopting prepaid electricity tariff through smart metering system. This may possibly be a remedial tool ensuring absolute collection efficiency of DISCOMs resolving the concern of “high rates of customer default on utility bills”¹⁵. This would, in turn, improve the financial health of the DISCOMs attracting more private investment in the distribution sector creating a multiplier effect. As a result, consumers can be supplied required quantum of electricity as per their need, in a cost-effective manner sinking unwarranted electricity usage¹⁶.

Various studies across the World have found that increasing electricity theft and high rates of customer default on electricity bill become a cause of concern for the bad financial health of DISCOMs especially in underdeveloped and developing countries and have suggested for the use of prepayment electricity tariff. This would be beneficial both for consumers and distributors of electricity and has been realised that with the successful implementation of prepaid tariff in electricity, the spirit of the government for providing electricity to all by 2018 would be successful. The major benefits of prepaid electricity tariff are summarised as below:

Benefits to DISCOMs:

- Improve operational efficiencies: Use of the prepaid meters would avoid the need for meter readers cutting the cost of meter reading and data entry. It would eliminate administrative hassles and cost associated with disconnection and reconnection, and faster detection of dead meters;
- Reduce financial risks: It would improve the collection efficiency by 100 percent, reducing the financial risk by improving the cash flows and necessitating an improved revenue management system;
- Reduce non-technical losses: Metering errors, tampering with meters leading to low registration and calibration related frauds are some of the key components of non-technical losses;
- Reduction in peak power purchase cost through better estimation of loads;
- It would help for real time energy auditing;
- The money in advance received from the customers would help to improve the financial health of DISCOMs driving their purchasing power. This would, on the other hand, utilise the surplus capacity of generators improving their PLF; and
- Prepaid meters can play a major role in reducing AT&C losses restricting theft through bypassing the meter.

Benefits to Consumers:

- It is one of the major power sector reforms to reduce exploitation of the consumers in terms of error in meter reading;
- Easy to use: Prepaid electricity tariff through smart meter is like prepaid cell phone, internet use and DTH where consumers can purchase electricity in any amount and at any time, in advance of its use. The prepaid meters are used with smart cards to hold information on units

consumed or equivalent money value. The consumer can recharge the prepaid card from a sales terminal or distribution point;

- The system enables customers for controlled use of electricity and helps them to save money through better electricity management;
- Ability to remotely manage and control appliances at home or office;
- Benefits for customers would improve energy efficiency and possibly reducing arrears over time;
- In many cases, landlords used to charge higher electricity tariff from the tenants. Prepaid metering would stop exploitation of tenants; and
- Faster restoration in case of outages.

5. The Way Forward

Worldwide, prepaid electricity meter has been growing significantly in recent years. In most of the countries, government typically has been the principal drivers of growth in the prepaid electricity meters through mandated use and incentives since most of the utilities are reluctant to invest in the new technology without a government mandate or incentive to do so. Because of limited budgets available with DISCOMs for capital expenditures, despite tremendous growth realised in the Indian electricity sector, the benefits of pace of technological advancements like deploying modern devices, smart meters (AMI) and ICT infrastructure, adopting new monitoring, control and energy management tools in electricity distribution has not been undertaken as desired.

The vision of India on smart grids is to “Transform the Indian power sector into a secure, adaptive, sustainable and digitally enabled ecosystem that provides reliable and quality energy for all with active participation of stakeholders” (Ministry of Power, n.d.).

Despite having provisions in the electricity act, tariff policy and national electricity policy to adopt pre-payment meter in electricity distribution, the impediments on a larger scale are predominately due to policy implementation, regulatory framework, financial implication and operational issues. In some of the developed countries there are separate regulations for prepaid meters unlike India. Though there are various policies/regulations in force to encourage prepaid meters, they are still not being able to be converted into workable actions and this may be due to challenges like (i) lowest cost approach in acceptance of tender, (ii) lack of promotional approach by the DISCOMs/Regulators/ Governments, (iii) high capital costs, (iv) financial crunch, (v) consumers' ignorance and lack of awareness, etc. Besides, since there is a necessity of reliable communication network and seamless connectivity of technology required for successful operation of the Smart Grid, which need huge capital expenditure to a great extent.

The cost of software (meter data management system, database, operating systems, etc.), hardware, system integration and operation and maintenance of the AMI system will be higher for covering all customers on a feeder. Hence, deploying AMI on full feeder basis will have significant cost difference (cost of meter, communication module and installation, testing and commissioning charges). The available communication technology in India is at par with many developed countries, however, there are issues in terms of interoperability of devices and systems, integration of the entire hardware system to manage high volumes of data, with reference to smart grid deployment in utility environment. These issues may have been considered as major hindrances for not installing prepaid electricity meters in India.

Cost of installation of smart meters (AMI), for all the households (about 25 crore) in India, would be Rs.1.68 lakh crore (cost per meter as estimated by ISGF is Rs.6733¹⁷ per meter including cost of software, hardware, installation, data concentration, setting up of network, operation & Maintenance, data management, etc).

As Electricity is deemed a concurrent subject, both the central government and state governments should realise their responsibility for the growth and sustainability of the power sector. Nevertheless, consumers have equal responsibility for making the sector viable which in turn would improve their welfare and also the socio-economic development of the country. Therefore, it is mission-critical to implement the prepaid tariff in electricity using AMI meters, although it requires huge capital expenditure increasing burden on both consumers and DISCOMs/Government. The measures suggested for implementing the programme are as follows:

- The prepaid electricity tariff needs to be implemented across the country within three years undertaking necessary amendments in the Electricity Act;
- The Forum of Regulators (FOR) may take up the issue with the State Electricity Regulatory Commissions and DISCOMs to implement the new technology urgently;
- Since the installation of smart meters is expensive and implementation needs huge capital expenditure, private DISCOMs may not show their interest in it. Leaving the responsibility to the private player may not be successful in the near future as observed since 2010. Therefore, both the central government and the state governments should consider the scheme as a flagship programme earmarking budgetary

provision for implementing the new technology;

- The cost may be shared (50:50) mutually between the centre and states;
- The cost of smart meters may be exempted for the families living below the poverty line (BPL), while for the other consumers, cost can be recovered daily on pro-rata basis linking to the tariff of the electricity;
- DISCOMs may undertake awareness campaign to motivate the consumers for the use of new technology; and
- DISCOMs are required to go for capacity building and modernisation.

Notes:

1. See report of the Central Electricity Authority on “Executive Summary of Power Sector”.
2. Per capita consumption of electricity is (Gross Generation + Net Import) / Mid-Year Population. The data on per capita consumption have been taken from “Executive Summary of Power Sector” for various months released by the Central Electricity Authority.
3. See Annual Report of the Central Electricity Authority for the years 2012-13 and 2014-15.
4. Electricity Act, 2003 consolidates the laws relating to generation, transmission, distribution, trading and use of electricity and generally for taking measures conducive to development of electricity industry, promoting competition therein, protecting interest of consumers and supply of electricity to all areas, rationalisation of electricity tariff, ensuring transparent policies regarding subsidies, promotion of efficient and environmentally benign policies constitution of Central Electricity Authority, Regulatory Commissions and establishment of Appellate Tribunal and

for matters connected therewith or incidental thereto.

5. Visit website of UDAY:
<https://www.uday.gov.in/home.php>.
6. Governments and utilities in poor or developing countries are often too cash-strapped to extend their grids. Part of the problem is widespread reluctance among users to pay for electricity. Customers who do not pay their mobile-phone bills can have their connection taken away remotely, but electricity is harder to cut off rather easier to steal. This creates a vicious circle in which utilities lose money, reducing the funds available for improving and expanding supply, and further sapping users’ willingness to pay. The real threat to energy access is that energy is not treated as a private good, but as a right. This practice can be curbed with the use of prepaid electricity meters (The Economist, 2016).
7. A study on the Impact of Prepaid Electricity Meters on Low-Income Households in South Africa during 2014- 2015 undertaken by Jack and Smith in 2016 reveals that theft of electricity occurs when users tap into the grid without paying the utility. Smart meters allow utilities to more precisely detect where and when electricity is being consumed. Additionally, many smart meters incorporate detection capabilities that notify utilities if they have been tampered with (Jack & Smith, 2016).
8. See Net National Product (NNP) at current prices in National Accounts Statistics, 2017 released by Central Statistics Office, Ministry of Statistics and Programme Implementation.
9. See the poverty estimates of Tendulkar Methodology, NITI Aayog, erstwhile Planning Commission in June 2014 and July 2013.
10. See National Sample Survey Office’s 68th Round “Household Consumption of

Various Goods and Services in India 2011-12” released on June 2014 and 5th Round Quinquennial Survey-1993-94 released on May, 1996.

11. See Press Release No. 73/2017 dated 13th September, 2017, Telecom Regulatory Authority of India.
12. See Internet World Stats, <http://www.internetworldstats.com/top20.htm>.
13. See TV Viewership in India – March 2017 – BARC Broadcast India Survey, “<http://marketinglessons.in/tv-viewership-india-barc-2017/>”
14. The World Bank had observed that Sub-Saharan Africa would not be able to accelerate progress towards universal access to electricity without improving the performance of utilities. This would in turn expand electricity connection and consumption, making electricity affordable and minimizing financial losses of utilities. The study based on 39 African countries suggests several ways including “installing prepaid meters that would benefit both utilities and customers including low-income group” for recovering the cost of supply and making electricity affordable (World Bank, 2016).
15. Jack and Smith in a study “Pay as You Go: Prepaid Metering and Electricity Expenditures in South Africa”, in May, 2015 found that high rates of customer default on utility bills became a barrier to the expansion for electricity access in the developing world and suggested that prepaid electricity meter offers a technological solution to ensure timely payment. Poorer households buy electricity more often, in smaller increments, and are most likely to buy (Jack & Smith, 2015a).
16. A study conducted by Jack and Smith in 2015 for International Growth Centre examined the effects of a policy change

in 2014 that switched 4,000 households to prepaid metering on the grid in Cape Town of South Africa. The study found that introduction of prepaid meters led to a 13 percent drop in electricity usage and the meters helped customers to better understand and take control of their energy usage and expenses. The switch to pre-paid electricity brought particularly large cost savings (through reduced energy consumption) to poor customers and those with a history of delinquent payments. There were also net benefits for the electric utility, due to more reliable payments and lower costs of recovery and administration. Overall, the satisfactory gains are realised to cover the costs of the prepaid meters (Jack & Smith, 2015b).

17. See “AMI Rollout Plan for India, ISGF-BNEF Knowledge Paper or ISGF, Note: Costs per meter assuming installation of 500,000 meters and O&M for 10 years”.

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Challenges and Constraints of Microenterprises in Takeo Province, Cambodia

Pheng Menghong^{*}

ABSTRACT

The study aims to identify the challenges and constraints faced by the microenterprises in Takeo province. Both quantitative and qualitative analyses have been carried out to meet the objectives of the study. All the 63 microenterprises involved in food and beverage business in the province have been taken into account for the study. The major challenges of microenterprises in Takeo province were lack of motivation of customers, lack of motivation and lack of control of employees and strong management of competitors. Similarly, the main constraints of the microenterprises were lack of government support, high house rent, lack of skills of workers to handle new technology, lack of sufficient and quick transportation service, poor customer relationship and handling, high collateral requirements of lending institutions and banks, lack of strategic business planning, and lack of motivation and drive, and lack of tolerance to work hard. The enterprises should look to the challenges and constraints faced by them and take necessary steps to minimize these problems in order to enhance their business performance. Besides, the government should provide support to the microenterprises to eradicate their challenges and constraints.

Keywords: *Challenges; constraints; microenterprises*

1. Introduction

Several researchers and scholars have attempted to define what family businesses are. For instance, Chrisman, Chua & Litz (2003) defined a family owned business (microenterprise) as family business bearing components of the family involvement, family ownership, management and/or business succession. In Cambodia context, microenterprise is defined as a smallest business that has employees less than 10 persons (Seng, 2009).

Microenterprise is considered as the foundation of an economy (Kirby, 2003). Developed and developing countries around the world are giving attention to micro and small enterprises because of their role in generating employment and hence economic growth (Bhasin & Akpalu,

2001). Micro, small and medium enterprises contribute to economic growth including creation of employment opportunity, infrastructure and development of local economy (Hong, 2012). In the developing world, the growth of microenterprise provides the most vibration and growing economic activities (Dash, 2012). But some micro enterprises face problems because of lack of management experience, lack of information and communication technology, and poor financial position (Storey, 1994; Chong, 2008; Cheung, 2008). The study by Wawire and Nafukho (2010) found that poor management is the second most cause of failure of micro and small enterprises. Lack of motivation of employees, inadequate marketing activities,

^{*} Research Scholar, Build Bright University, Cambodia. E-mail: menghong_pheng@yahoo.com

poor management and low information technology are also the factors which are responsible for the poor performance of the micro and small enterprises (Flanagan & Van Horn, 2001; Rogoff et al., 2004). A number of surveys conducted by different organisations have identified a set of barriers impeding development of Cambodian Small and Medium Enterprises (SMEs). A 2004 World Bank (WB) survey identified the main issues hampering the development of Cambodian business in general. The Asian Development Bank (ADB) and the Cambodian SME Sub-Committee have identified many of the same issues as specific to the development of Cambodian SMEs. Those barriers are registration, politico-legal, collateral, lack of information, market and technology. And there are several constraints and challenges faced by micro enterprises in Cambodia (RGC, 2005).

In Cambodia, economic growth mainly depends on micro enterprise as they generate high percentage of employment. Family owned businesses (micro enterprises) in the country have been an important feature of business circles for long. They may start as micro and grow into small, medium and large corporations if well nurtured (Colli & Rose, 2008). They play important role in employment and income generation, and wealth accumulation. These businesses are a dominant form of family ownership in majority of the world economies.

There are many kinds of microenterprises in Cambodia. Among those, food and beverage enterprises are facing a lot of challenges and constraints in doing business now-a-days in the country. In Cambodia, it is important to understand and find out solutions to deal with the challenges and constraints to make business successful. Takeo province of Cambodia bordering with the neighbouring country Vietnam is facing a lot of challenges and constraints of business in food and beverage

sector. Further, in Cambodia, there are many micro enterprises, and Takeo province has great potential for doing business because of its locational advantage as the province joins with Vietnam border. The province faces a number of obstacles in business like the other provinces in the country and the solution of these obstacles are very much essentials for the success of the businesses of microenterprises in the province.

2. Objectives

The study has the following objectives:

- i. To identify the challenges in regard to customer, employee and competitor factors influencing success of microenterprises in Takeo province.
- ii. To identify the constraints in regard to political, working space, technology, infrastructure, marketing, financial, managerial and entrepreneurial factors influencing success of microenterprises in Takeo province.

3. Literature Review

Microenterprise is defined as a smallest business with less than 10 employees (Parker & Torres, 1994). Chrisman, Chua and Litz (2003) defined microenterprise as family business involvement with business ownership. But according to a White Paper of the Department of Trade and Industry of the Republic of South Africa (1995), microenterprise refers to a very small business, often involving only the owner, some family members and at the most one or two paid employees.

The success of micro enterprises depends on the overcoming of the challenges and constraints influencing their business. A study by Hong (2012) mentioned that enterprise needs to provide training to employees because it would help in the increase of production, and

the training has strong positive impact on the sales performance of micro, small and medium enterprises. He also added that competitors influenced moderately on the sales volume of the enterprises.

According to Amabile (1993), motivation plays an important role in making the employees work hard, and it helps survival of the company (Smith, 1994). Marketing strategy is the key to keep existing customers and find out new customers through the products or services (Kotle et al., 1994). Cheung (2008) believed that lack of training in management and poor experience caused the decline in sales of the products. Promotion of the product and service plays an important role to persuade existing and new customers (Hong, 2012).

Microenterprise owner needs to motivate and train the staff well because these can make the staff to perform better and build employee's confidence in doing their tasks. Training is the act of increasing the skills of an employee for doing a particular job (Sommerville, 2007). On the other hand, customer's motivation would help the enterprise increase its sales volume. Companies lose or win depends on what percentage of their customers they can keep. Success is largely about the retention of customers (Chotipanich, 2004).

A research by Hong (2012) mentions that location and good infrastructure are very important for distribution of products because products can be brought to the market easily, and good network communication between seller and buyer can be done due to the availability of proper transport and communication facility. Technology factor can bring easy way for processing of products. Technology can bring more information as well. Using information technology, a marketer can reach an enormous number of people with just the click of a button. Networked technologies give millions of people instant

access to each other, and this fact is being exploited ever more actively by marketers trying to get their products into the public eye. Technology is primarily used in transport and communications, in reduction of transport costs of goods, and in providing funds and information around the world (Graham, 1999).

A research by Lane, Esser, Holte and McCusker (2010) observed that good working environment in terms of wages and working hours is very important to satisfy employees. Good work performance of the employees depends on motivation, job security and good relation with the employers (Sousa-Poza, 2000; Gaziohlu & Tanselb, 2006; Skalli, Theodossiou & Vasileiou, 2008).

William and Nanda (2009) said that financial factor is the main factor influencing success of enterprises. Finance brings the business growth faster, competitive advantages, enlarges business, enlarges market share, and so on. Micro and small enterprise success and failure are determined by cash flow management (Wanjiku, 2009).

Marketing is the one of the most important strategies which bring business growth. The marketing activities bring the sellers and buyers to exchange their products and services. According to Kotler (2004), and Chaston (2002), marketing management is a philosophy that leads to the process by which organizations satisfy customer's needs. But, lack of marketing information brings micro and small enterprises down.

Entrepreneurs stimulate employment growth by generating new jobs when they enter the market. Entrepreneurs need to have high tolerance for developing new products to satisfy customers. According to Garavan and Barra (1994), entrepreneurship training brings useful knowledge of entrepreneurship, acquires skills in the use of techniques, and develop

attitude toward customer's need. It generates technical skills, business management skills and personal entrepreneurial skills (Hisrich & Peter, 1998).

4. Methodology

Both quantitative and qualitative analyses have been carried out to meet the objectives of the study. In order to analyse the constraint and challenges of microenterprises in the study area, primary and secondary data have been used. The primary data have been collected through a field survey among the selected food and beverage microenterprises in the study area with a structured questionnaire. Secondary data, both published and unpublished, have been gathered from the sources such as the Ministry of Industry, Mines and Energy (MIME), the Ministry of Tourism, the Ministry of Planning (MoP) of the Royal Government of

Cambodia (RGC) relevant documents and reports published by the National Institute of Statistics (NIS), besides, journals, magazines and several other web sources, etc.

Among the 25 cities and provinces in Cambodia, Takeo province has been selected for the study purpose. The most important reason of selecting Takeo province is because of its proximity to the capital city of Phnom Penh. The province has a total of 10 districts comprising of 100 communes. As per the official statistics (MIME, 2013), in total, the province has 181 registered enterprises comprising of micro, small, medium and large enterprises. To carry out the proposed study, all the 63 microenterprises involved in food and beverage business in the province are taken into account. The presence of the number of food and beverage microenterprises in several districts of the province is as follows:

Table 1: District-wise number of food and beverage enterprises

Sl. No.	District	Number of Microenterprises
1	Angkor Borei	4
2	Bati	19
3	Borei Cholsar	-
4	Kaoh Andaet	-
5	Kiri Vong	5
6	Krong Doun Kaev	16
7	Prey Kabbas	3
8	Samraong	1
9	Tram Kak	7
10	Treang	8
Total		63

Note: Among the 10 districts in the province, two districts do not have food and beverages microenterprises.

Source: General Registered List of Enterprises (2013), Ministry of Industry, Mines and Energy (MIME), and Department of Industry, Mines and Energy, Takeo province.

Data collected for the purpose of the study is further processed and tabulated keeping the objectives of the study in mind. The interrelationship among the data forms the basis for tabulation. Simple statistical

calculation such as percentage has been carried out for the purpose of analysis. The Statistical Package for the Social Sciences (SPSS) and MS Excel have been used to process the data.

5. Results and Discussions

Table 2 below shows that the challenges of customer factor which consisted of three items. Among the three items, lack of motivation to customer was the most critical factor that affected the performance of microenterprises in food and beverage sector having the opinion of 79.3 percent respondents as agree, 11.1 percent disagree, 4.8 percent strongly disagree and 4.8 percent strongly agree. Lack of differentiation in products/services was the second most

challenging item of customer factor with 63.6 percent respondents viewed of agree, 17.5 percent disagree, 9.5 percent strongly agree and 6.4 percent undecided. For the challenging factor lack of promotion for the product/service, 52.4 percent respondents agreed with the view, 27 percent disagreed, 20.7 percent strongly agreed, and only 4.8 percent strongly disagreed.

Table 2: Opinion of microenterprises on customer factor

Sl. No.	Customer Factor	SDA	DA	UN	AG	SA	Total
1	Lack of motivation	3 4.8%	7 11.1%	-	50 79.3%	3 4.8%	63 100.0%
2	Lack of differentiation of the product/service	2 3.2%	11 17.5%	4 6.4%	40 63.6%	6 9.5%	63 100.0%
3	Lack of promotion for the product/service	3 4.8%	17 27%	3 4.8%	33 52.4%	7 20.7%	63 100.0%

Note: SDA = Strongly Disagree, DA = Disagree, UN = Undecided, AG = Agree, SA = Strongly Agree
Source: Field Survey Data, 2015.

The challenges of employee factor were found to be lack of motivation, lack of training and lack of control. Table 3 shows that 71.4, 66.7 and 71.4 percent respondents agreed with the

above view-points respectively. But the corresponding percentages of respondents who disagreed with the above opinions were 9.5, 23.8 and 12.7.

Table 3: Opinion of microenterprises on employee factor

Sl. No.	Employee Factor	SDA	DA	UN	AG	SA	Total
1	Lack of motivation	3 4.8%	6 9.5%	3 4.8%	45 71.4%	6 9.5%	63 100.0%
2	Lack of training	3 4.8%	15 23.8%	-	42 66.7%	3 4.8%	63 100.0%
3	Lack of control	3 4.8%	8 12.7%	3 4.8%	45 71.4%	4 6.4%	63 100.0%

Note: SDA = Strongly Disagree, DA = Disagree, UN = Undecided, AG = Agree, SA = Strongly Agree
Source: Field Survey Data, 2015.

In case of competitor factor, there were three indicators which had affected the growth of microenterprises. Among the three, strong management played an important role in generating enterprise growth with 76.2 percent respondents having the opinion agreed, 9.5 percent disagreed, 7.9 percent strongly agreed, and only 3.2 percent strongly disagreed. For the factor effective strategic plan, 63.6 percent respondents believed that it could build the business growth of the enterprises. But 22.2

percent, 12.7 percent and 1.6 percent respondents disagreed, strongly agreed, and strongly disagreed respectively with the above view. While 50.9 percent and 15.9 percent respondents agreed and strongly agreed respectively that strong capital/finance influenced the growth of microenterprises, respective 20.6 percent and 6.4 percent respondents disagreed and strongly disagreed with the above view (Table 4).

Table 4: Opinion of microenterprises on competitor factor

Sl. No.	Competitor Factor	SDA	DA	UN	AG	SA	Total
1	Strong capital/finance	4 6.4%	13 20.6%	4 6.4%	32 50.9%	10 15.9%	63 100.0%
2	Strong management	2 3.2%	6 9.5%	2 3.2%	48 76.2%	5 7.9%	63 100.0%
3	Effective strategic plan	1 1.6%	14 22.2%	-	40 63.6%	8 12.7%	63 100.0%

Note: SDA = Strongly Disagree, DA = Disagree, UN = Undecided, AG = Agree, SA = Strongly Agree

Source: Field Survey Data, 2015.

The constraints of politico-legal factor experienced by the enterprises were found to be five, i.e., (1) the tax levied on the business is not reasonable, (2) bureaucracy in company registration and licensing, (3) lack of government support, (4) political intervention, and (5) lack of accessibility to information relevant to the business. Lack of government support was the most critical constraint faced by the microenterprises in Takeo with 66.7 percent respondents agreed with it, 15.9 percent disagreed, 8 percent strongly disagreed, 6.4 percent strongly agreed, and 3.2 percent undecided. The second important constraint was political intervention with 61.9

percent respondents agreed with the view followed by 23.8 percent disagreed. Lack of accessibility to information relevant to the business was another constraint, as 58.7 percent respondents agreed with the view followed by 23.8 percent disagreed. Similarly, 55.7 percent respondents agreed that tax levied on business was not reasonable, and 19.1 percent strongly agreed, whereas, 12.7 percent disagreed with the view. Among the total respondents, 39.7 percent agreed that bureaucracy in company registration was one of the constraints of microenterprises as against 33.3 percent disagreed with this opinion (Table 5).

Table 5: Opinion of microenterprises on politico-legal factor

Sl. No.	Politico-legal Factor	SDA	DA	UN	AG	SA	Total
1	The tax levied on the business is not reasonable	4 6.4%	8 12.7%	4 6.4%	35 55.7%	12 19.1%	63 100.0%
2	Bureaucracy in company registration and licensing	3 4.8%	29 33.3%	3 4.8%	25 39.7%	3 4.8%	63 100.0%
3	Lack of government support	5 8%	10 15.9%	2 3.2%	42 66.7%	4 6.4%	63 100.0%
4	Political intervention	4 6.4%	15 23.8%	2 3.2%	39 61.9%	3 4.8%	63 100.0%
5	Lack of accessibility to information relevant to the business	2 3.2%	15 23.8%	3 4.8%	37 58.7%	6 9.6%	63 100.0%

Note: SDA = Strongly Disagree, DA = Disagree, UN = Undecided, AG = Agree, SA = Strongly Agree
Source: Field Survey Data, 2015.

Among the working-space factors, high house rent was the most important constraint of microenterprises as 71.4 percent respondents agreed with this view followed by 15.9 percent strongly agreed, and 6.4 percent disagreed. The second most constraint of the working-space factor of the microenterprises was absence of own premises. The percentages of respondents

having the opinions of agreed and disagreed with the above viewpoint were 65.2 and 17.5 respectively. More than 68 percent respondents agreed and strongly agreed that the current working place was not convenient for business, and 20.7 percent respondents disagreed with this view (Table 6).

Table 6: Opinion of microenterprises on working-space factor

Sl. No.	Working-space Factor	SDA	DA	UN	AG	SA	Total
1	Absence of own premises	5 8%	11 17.5%	-	41 65.2%	6 9.6%	63 100.0%
2	Current working place is not convenient	5 8%	13 20.7%	2 3.2%	32 50.9%	11 17.5%	63 100.0%
3	The rent of house is too high	3 4.8%	4 6.4%	3 4.8%	43 71.4%	10 15.9%	63 100.0%

Note: SDA = Strongly Disagree, DA = Disagree, UN = Undecided, AG = Agree, SA = Strongly Agree
Source: Field Survey Data, 2015.

In case of technological factor, lack of skills to handle new technology was the main constraint of microenterprises as 65.1 percent respondents agreed with this view.

The other two important technological

constraints were lack of appropriate machinery and equipment, and lack of money to acquire new technology as expressed by 63.6 percent respondents in the study area. Only 31.7 percent respondents agreed with the view that the enterprises were to unable to select proper

technology, whereas, 47.7 percent respondents disagreed with the opinion (Table 7).

Table 7: Opinion of microenterprises on technological factor

Sl. No.	Technological Factor	SDA	DA	UN	AG	SA	Total
1	Lack of appropriate machinery and equipment	5 8%	12 17.5%	3 4.8%	40 63.6%	3 4.8%	63 100.0%
2	Lack of skills to handle new technology	5 8%	10 15.9%	4 6.4%	41 65.1%	3 3.2%	63 100.0%
3	Lack of money to acquire new technology	3 3.2%	10 15.9%	-	40 63.6%	10 15.9%	63 100.0%
4	Unable to select proper technology	5 8%	30 47.7%	3 4.8%	20 31.7%	5 8%	63 100.0%

Note: SDA = Strongly Disagree, DA = Disagree, UN = Undecided, AG = Agree, SA = Strongly Agree
Source: Field Survey Data, 2015.

Lack of sufficient and quick transportation service was a big constraint for microenterprises as 69.9 percent respondents agreed with it. The next two infrastructural constraints were insufficient and interrupted water supply, and power interruption as agreed by respective 64.7 and 62.0 percent respondents.

The percentages of respondents who agreed lack of appropriate dry waste and sewerage system and lack of business development service were 34.9 and 33.3 respectively against 52.5 percent and 47.7 percent respondents disagreed with these views respectively (Table 8).

Table 8: Opinion of microenterprises on infrastructural factor

Sl. No.	Infrastructural Factor	SDA	DA	UN	AG	SA	Total
1	Power interruption	3 4.8%	6 9.5%	-	39 62%	15 23.9%	63 100.0%
2	Insufficient and interrupted water supply	3 4.8%	10 15.9%	3 4.8%	42 64.7%	5 8%	63 100.0%
3	Lack of business development service	5 7.9%	30 47.7%	4 6.4%	21 33.3%	3 4.8%	63 100.0%
4	Lack of sufficient and quick transportation service	3 4.8%	10 15.9%	2 3.2%	44 69.9%	5 8%	63 100.0%
5	Lack of appropriate dry waste and sewerage system	5 8%	33 52.5%	-	22 34.9%	3 4.8%	63 100.0%

Note: SDA = Strongly Disagree, DA = Disagree, UN = Undecided, AG = Agree, SA = Strongly Agree
Source: Field Survey Data, 2015.

There were seven constraints of marketing factor of microenterprises in the study area.

Poor customer relationship and handling was

the main constraint as 68.4 percent respondents agreed with it. The second most important constraint of marketing factor was difficulty in searching new market, which was agreed by 58.7 percent respondents. The percentages of

respondents who agreed with the views of inadequate market for the product, lack of demand, lack of market information and lack of promotion to attract potential users were 47.7, 45.6, 45.6 and 36.8 respectively. Only 23.3

percent respondents agreed that there was absence of relationship with marketing research organization, whereas, 42.4 percent respondents did not agree with this view (Table 9).

Table 9: Opinion of microenterprises on marketing factor

Sl. No.	Marketing Factor	SDA	DA	UN	AG	SA	Total
1	Inadequate market for the products	5 7.9%	9 14.3%	5 8%	30 47.7%	14 22.3%	63 100.0%
2	Searching new market is so difficult	4 6.4%	9 14.3%	2 3.2%	37 58.7%	11 17.5%	63 100.0%
3	Lack of demand	7 11.1%	15 23.8%	3 4.8%	35 45.6%	3 4.8%	63 100.0%
4	Lack of market information	7 11.1%	13 20.7%	3 4.8%	35 45.6%	5 8%	63 100.0%
5	Absence of relationship with marketing research organization	6 9.5%	33 42.4%	4 6.4%	15 23.3%	5 8%	63 100.0%
6	Lack of promotion to attract potential users	4 6.4%	29 36.1%	2 3.2%	25 36.8%	3 4.8%	63 100.0%
7	Poor customer relationship and handling	4 6.4%	10 15.8%	2 3.2%	43 68.4%	4 6.4%	63 100.0%

Note: SDA = Strongly Disagree, DA = Disagree, UN = Undecided, AG = Agree, SA = Strongly Agree
Source: Field Survey Data, 2015.

The finding relating to financial factor showed that high collateral requirement of lending institutions and banks was the important constraint for microenterprises with the opinion of agreed 71.5 percent respondents followed by shortage of working capital and lack of financial management skills having the

opinion of agreed of 55.6 percent respondents each. With regard to the financial constraint inadequate number of credit institutions, only 31.8 percent respondents agreed with this view as against 49.2 percent respondents having the opinion of disagreed (Table 10).

Table 10: Opinion of microenterprises on financial factor

Sl. No.	Financial Factor	SDA	DA	UN	AG	SA	Total
1	Inadequate number of credit institutions	4 6.4%	31 49.2%	-	20 31.8%	8 12.7%	63 100.0%
2	Lack of financial management skills	4 6.4%	13 20.7%	1 1.6%	35 55.6%	10 15.9%	63 100.0%
3	Shortage of working capital	4 6.4%	15 23.9%	2 3.2%	35 55.6%	7 11.1%	63 100.0%
4	High collateral requirement of lending institutions and banks	-	12 19.1%	-	45 71.5%	6 9.5%	63 100.0%

Note: SDA = Strongly Disagree, DA = Disagree, UN = Undecided, AG = Agree, SA = Strongly Agree
Source: Field Survey Data, 2015.

With regard to managerial factor, 74.7 percent respondents agreed that lack of strategic business planning was the most important constraint of microenterprises followed by the constraint poor organization and ineffective communication with the views of 63.5 percent respondents. The other managerial constraints

were lack of low cost and accessible training facilities, lack of well-trained and experienced employees, and lack of clear duties and responsibilities among employees, which were agreed by respective 58.8 percent, 55.6 percent and 47.6 percent respondents (Table 11).

Table 11: Opinion of microenterprises on managerial factor

Sl. No.	Managerial Factor	SDA	DA	UN	AG	SA	Total
1	Lack of clear duties and responsibilities of the employees	4 6.4%	12 19.1%	2 3.2%	30 47.6%	15 23.9%	63 100.0%
2	Poor organization and ineffective communication	4 6.4%	6 9.6%	2 3.2	40 63.5%	11 17.5%	63 100.0%
3	Lack of well-trained and experienced employees	3 4.8%	20 31.8%	3 4.8%	35 55.6%	2 3.2%	63 100.0%
4	Lack of low cost and accessible training facilities	2 3.2%	16 25.4%	-	37 58.8%	8 12.7%	63 100.0%
5	Lack of strategic business planning	-	14 22.3%	-	47 74.7%	2 3.2%	63 100.0%

Note: SDA = Strongly Disagree, DA = Disagree, UN = Undecided, AG = Agree, SA = Strongly Agree

Source: Field Survey Data, 2015.

The two most important constraints of the microenterprises relating to entrepreneurship factor were lack of motivation and drive, and lack of tolerance to work hard as 74.6 percent respondents agreed with this viewpoint. Similarly, 65.1 percent respondents had the opinion agreed on the constraint lack of entrepreneurship training followed by 57.1

percent respondents agreed with the constraint lack of persistence and courage for failure. Only 31.8 percent respondents supported the view lack of information to exploit business opportunities as constraint, whereas, 54.0 percent respondents did not agree with this view (Table 12).

Table 12: Opinion of microenterprises on entrepreneurship factor

Sl. No.	Entrepreneurship Factor	SDA	DA	UN	AG	SA	Total
1	Lack of motivation and drive	2 (3.2%)	8 (12.7%)	3 (4.8%)	47 (74.6%)	3 (4.8%)	63 (100.0%)
2	Lack of tolerance to work hard	2 (3.2%)	8 (12.7%)	3 (4.8%)	47 (74.6%)	3 (4.8%)	63 (100.0%)
3	Lack of persistence and courage for failure	1 (1.6%)	24 (38.1%)	-	36 (57.1%)	2 (3.2%)	63 100.0%
4	Lack of entrepreneurship training	4 (6.4%)	12 (19.1%)	2 (3.2%)	41 (65.1%)	4 (6.4%)	63 100.0%
5	Lack of information to exploit business opportunities	5 (7.9%)	34 (54.0%)	-	20 (31.8%)	4 (6.4%)	63 100.0%

Note: SDA = Strongly Disagree, DA = Disagree, UN = Undecided, AG = Agree, SA = Strongly Agree

Source: Field Survey Data, 2015.

The business owner of each microenterprise was asked to indicate rank on the challenge factors with one being the most important and three being the least important that affect success of microenterprises. Based on the finding, customer factor was the most important factor as 46 percent respondents had given rank one. The percentages of respondents giving rank one to employee and competitor

factors were 33.3 and 28.6 respectively. In case of rank two, the percentages of respondents giving ranks to employee, customer and competitor factors were respective 42.9, 31.7 and 30.2. On the other hand, 41.3 percent respondents had given rank three to competitor factor followed by 23.8 percent to employee factor and 22.2 percent to customer factor (Table 13).

Table 13: Opinion of respondents as per their ranking of challenge factors

Sl. No.	Challenge Factors	Ranks			Total
		1	2	3	
1	Employee Factor	21 33.3%	27 42.9%	15 23.8%	63 100.0%
2	Customer Factor	29 46%	20 31.7%	14 22.2%	63 100.0%
3	Competitor Factor	18 28.6%	19 30.2%	26 41.3%	63 100.0%

Source: Field Survey Data, 2015.

The business owner of each microenterprise was asked to indicate rank on constraints they faced with one being the most important in the scale one to ten. Table illustrates ranking of the main constraints of success of microenterprises. The most important constraint faced by the microenterprise owners was financial factor that had views of 73.1 percent respondents with rank one. They believed that finance could help to enlarge business growth. The next important constraint

was technological factor, and it was found that 66.8 percent respondents supported this view by giving rank three. With regard to marketing factor, 62 percent respondents had given rank three. More than 52 percent respondents mentioned managerial factor as the constraint in business by giving rank four. The least important constraint was found to be entrepreneurial factor as 44.5 percent respondents had given rank six (Table 14).

Table 14: Opinion of respondents as per their ranking of constraint factors

Sl. No.	Constraint Factors	Ranks								Total
		1	2	3	4	5	6	7	8	
1	Politico-legal factor	4 6.4%	6 9.5%	3 4.8%	4 6.4%	4 6.4%	4 6.4%	13 20.7%	25 39.7%	63 100.0%
2	Working space factor	4 6.4%	2 3.2%	2 3.2%	5 7.9%	32 50.9%	6 9.5%	5 7.9%	7 11.1%	63 100.0%
3	Technological factor	1 1.6%	4 6.4%	42 66.8%	5 7.9%	2 3.2%	7 11.1%	1 1.6%	1 1.6%	63 100.0%
4	Infrastructural factor	3 4.8%	3 4.8%	2 3.2%	9 14.3%	7 11.1%	6 9.5%	26 41.3%	7 11.1%	63 100.0%
5	Marketing factor	1 1.6%	39 62%	3 4.8%	2 3.2%	7 11.1%	2 3.2%	7 11.1%	2 3.2%	63 100.0%
6	Financial factor	46 73.1%	3 4.8%	2 3.2%	3 4.8%	2 3.2%	2 3.2%	2 3.2%	3 4.8%	63 100.0%
7	Managerial factor	2 3.2%	1 1.6%	2 3.2%	33 52.5%	3 4.8%	7 11.1%	4 6.4%	11 17.6%	63 100.0%
8	Entrepreneurial factor	3 4.8%	5 7.9%	5 7.9%	3 4.8%	4 6.4%	28 44.5%	6 9.5%	9 14.3%	63 100.0%

Source: Field Survey Data, 2015.

5. Conclusion

The study has found four major challenges of microenterprises in Takeo province. The challenges were lack of motivation of customers, lack of motivation and lack of control of employees and strong management of competitors. The enterprises also had faced a number of constraints in their business operations in the study area. The main constraints were lack of government support, high house rent, lack of skills to handle new technology, lack of sufficient and quick transportation service, poor customer relationship and handling, high collateral requirements of lending institutions and banks, lack of strategic business planning, and lack of motivation and drive and lack of tolerance to work hard. The microenterprises should look to the challenges and constraints faced by them and take necessary steps to minimize these problems in order to enhance their business performance. Besides, the government should provide support to the microenterprises to eradicate their challenges and constraints so that the enterprises can run their business smoothly and contribute to the economic development of the country.

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A Comprehensive Study on Tax Administration, Tax Policy and Impact of Tax Revenue on Economic Growth of Cambodia

Eng Ratana*

ABSTRACT

Title	A Comprehensive Study on Tax Administration, Tax Policy and Impact of Tax Revenue on Economic Growth of Cambodia
Research Scholar	Eng Ratana
Supervisor	Prof. Tapas Ranjan Dash
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Tax is a major source of government revenue directed towards redistributing income, ensuring economic stabilization as well as resource allocation and at the same time becoming supportive to the economic growth. A properly designed tax system is aimed to achieve desired fiscal policy objectives in the most efficient way, namely, by limiting undesired distortions, minimizing the cost of tax collection and promoting economic growth. The efficiency of taxation and particularly the tax structure, therefore, plays an important role in achieving economic growth and fiscal consolidation. As per the conventional economic theory, taxation creates distortions and impacts negatively on economic growth. Considering a simple production function, it is apparent that taxation can affect growth through its impact on (1) physical capital, (2) human capital and (3) total factor productivity.

Taxation is considered as critical in the state

building agenda, apart from maximizing revenue, economic efficiency and compliance. Good tax governance not only mobilizes and rationally uses resources to promote development, but also develops strategies aimed at promoting accountability, transparency and trust. Tax policy decisions are the outcome of complex social and political interactions between different groups in the society. Improving tax outcomes depends in large part upon the perception of people in a country. Therefore, understanding the tax administration and policies governing tax system in a country assumes significance.

Irrespective of the political system of a particular country, government collects taxes in order to provide an efficient and steadily expanding non-revenue yielding services such as infrastructure, education, health, communications system, and essential public services including employment opportunities

* Director, Department of Large Taxpayers, General Department of Taxation, Ministry of Economy and Finance, Cambodia.
E-mail: eng.ratana@tax.gov.kh

for its citizens. Though the tax revenue plays an important role towards economic growth of a country as revealed by several recent empirical studies, however, the consensus among experts is that taxes on corporate and personal income are particularly harmful to economic growth, with consumption and property taxes less so, as economic growth ultimately comes from production, innovation, and risk-taking. Thus, the relationship between economic growth and tax revenue is a debate which existed for a long time in the economic history.

Cambodian tax system has gone through the process of reform and development. The culture of paying tax is not spontaneous which leads to limited compliance to tax laws and regulations by taxpayers in the country. In addition, unfair competitiveness, limited taxpayers' education and services, weakness of enforcement compliance through tax audit and sanctions led to limited compliance to tax laws and regulations. The General Department of Taxation has insufficient number of staff and skills for administering certain number of taxpayers. The effectiveness of staff performance has been rarely found in the whole organization because of low staff remuneration and the weak performance review in the organization. Moreover, it has also been observed that among the staff members, the level of understanding and knowledge is limited and there is a lack of adequate professionalism in the concerned areas.

With an experience of two decades of strong economic growth, Cambodia has attained the lower-middle-income status in 2015. However, apart from others, health and education remain most important challenges and development priorities for Cambodia. Therefore, to meet a number of development challenges, including weak public service delivery, Cambodia needs additional revenue for important public spending and investment requirements. Thus,

strengthening and streamlining collection of tax revenue seem to be vital for the country.

Cambodia's tax base has been on the increase in order to mobilize the resources needed to execute infrastructural projects. The idea that taxes affect economic growth has become politically contentious and is a subject of much debate. The tax revenues of Cambodia as shown by statistics have been fluctuating along with its economic growth, which calls for the need to investigate whether there exists any relationship and causation between the variables. Against the above backdrop, it is quite pertinent to examine the relationship between tax revenues of different kinds as well as total tax revenue and economic growth of Cambodia.

On the basis of the problem statement and need for research, the study has been undertaken to provide answers to the following research questions:

- i. What is the structure and functions of the General Department of Taxation as well as the roles and responsibilities of key positions of the various departments under the General Department of Taxation of the Royal Government of Cambodia?
- ii. What are the existing major tax policies including tax legislations and regulations, tax rate and tax incentives along with the obligations and rights of tax payers in the country?
- iii. What are the procedures of tax administration including tax registration, return filing, tax audit, taxpayer appeal procedures and tax arrears collection along with enforcements carried out by the General Department of Taxation?
- iv. How much are the shares of different kinds of tax revenues to total tax revenue over the period 2004-2015 in the country?

- v. What is the relationship between tax revenues of different kinds as well as total tax revenue and economic growth of Cambodia over the study period?
- vi. What are the trends and future tax revenues of different kinds in Cambodia over the period 2016-2025?

The study has been undertaken with the following objectives:

- i. To study the structure and functions of the General Department of Taxation as well as the roles and responsibilities of key positions of the various departments under the General Department of Taxation of the Royal Government of Cambodia;
- ii. To critically examine the existing major tax policies including tax legislations and regulations, tax rate and tax incentives along with the obligations and rights of tax payers in the country;
- iii. To study the procedures of tax administration including tax registration, return filing, tax audit, taxpayer appeal procedures and tax arrears collection along with enforcements carried out by the General Department of Taxation;
- iv. To find out the shares of different kinds of tax revenues to total tax revenue over the period 2004-2015 in the country;
- v. To know the relationship between tax revenues of different kinds as well as total tax revenue and GDP of Cambodia over the study period;
- vi. To analyze the trend and project the future tax revenues of different kinds in Cambodia over the period 2016-2025; and
- vii. To suggest suitable measures in streamlining tax legislations as well as strengthening tax administration in order to raise the level of tax revenues in Cambodia.

The study has tested the null hypotheses which are as follows:

- Ho 1: There is no variation in the percentage shares of different kinds of tax revenues to total tax revenue over the study period in Cambodia.
- Ho 2: Profit tax has no significant impact on the GDP of Cambodia.
- Ho 3: Value added tax has no significant impact on the GDP of Cambodia.
- Ho 4: Excise tax has no significant impact on the GDP of Cambodia.
- Ho 5: Tax on salary has no significant impact on the GDP of Cambodia.
- Ho 6: Tax on property rental has no significant impact on the GDP of Cambodia.
- Ho 7: Turnover tax has no significant impact on the GDP of Cambodia.
- Ho 8: Other tax revenue has no significant impact on the GDP of Cambodia.
- Ho 9: Total tax revenue has no significant impact on the GDP of Cambodia.

To achieve the objectives and test the hypotheses, the study has collected necessary secondary information from various sources. By using both descriptive and quantitative analysis, the study has come up with the results as given below:

First, the structure and functions of the General Department of Taxation along with the roles and responsibilities of key positions of the various departments under the department have been analyzed. It has been revealed from the study that in 2008, Tax Department has become the General Department of Taxation, under the supervision of the Ministry of Economy and Finance, which comprises of seven departments at headquarters, nine district branches in Phnom Penh and 24 provincial tax branches.

Second, specifically, (i) Department of Personnel, Administration and Finance functions as secretariat for the General Department of Taxation to manage staff and look after administration and finance; (ii) Department of Law Litigation and Statistics functions as secretariat for the General Department of Taxation to organize law, and manage litigation and statistics; (iii) Department of Taxpayers Service and Tax Arrears functions as secretariat for the General Department of Taxation to provide service to taxpayers and manage tax arrears; (iv) Department of Controlling functions as secretariat for the General Department of Taxation to monitor activities; (v) Department of Information Technology functions as secretariat for the General Department of Taxation to manage information technology system; (vi) Department of Large Taxpayer functions as secretariat for the General Department of Taxation to manage the large taxpayers; and (vii) Department of Enterprise Audit functions as secretariat for the General Department of Taxation to conduct audit.

Third, each department under the General Department of Taxation has its own roles and responsibilities. However, due to limited resource of tax knowledgeable person, the General Department of Taxation has created 78 working groups in which the heads of the working groups are from key positions. Due to workload assigned to related working groups, the functions of each department of the General Department of Taxation are not working well.

Fourth, in spite of having a clear-cut structure and functions of each department of the General Department of Taxation at central level as well as at provincial level, in actual practice sometimes it takes long process for work procedures related to taxpayer services, tax payment process of taxpayers and other procedures related to taxpayer's registration as

well as VAT cross checking due to information exchange and official mindset.

Fifth, sometimes there is duplication of work, i.e., the same work is performed by more than one department. For example, the work performed by the Department of Large Taxpayers or Provincial Tax Branches or Khan Tax Branches and Department of Enterprise Audit with respect to tax audit on taxpayers is same.

Sixth, the law on taxation has stipulated three types of tax regimes in Cambodia such as (1) Real Regime (self-assessment system), (2) Simplified Regime and (3) Estimated Regime (official assessment system). The implementation of this law is only two regimes, i.e., estimated regime and real regime (self-assessment system).

Seventh, there are 18 types of taxes imposed in both the regimes. These are tax on profit, prepayment of profit tax, additional profit tax on dividend distributions, withholding tax, minimum tax, tax on salary, value added tax, specific tax on certain merchandises and services, public lighting tax, accommodation tax, turnover tax, tax on property rental, registration tax and stamp tax, patent tax, unused land tax, slaughter tax, tax on means of transportation and property tax.

Eighth, the Royal Government of Cambodia has been improving its investment facilitation services. The law on investment has been amended from time to time and investment incentives have been reviewed and provided under the 2004 Law on investment. However, due to the increase in the number of local small and medium enterprises (SMEs), government of Cambodia may need to review the law and consider the best incentives to be provided to both local SMEs and foreign investors to invest in Cambodia.

Ninth, tax incentive is granted to a Qualified Investment Project (QIP). Based on the amended Law on Investment, QIPs may select tax incentive either as profit tax exemption or use special depreciation. In addition, QIPs may receive exemption on the import of production of equipment, construction materials, etc. The tax incentive is limited to certain sectors with some conditions and requirements, thus, some investment projects are not eligible for tax incentive.

Tenth, every tax payer is obliged to follow all tax rules and regulations as per the specified time and file the tax returns even though they have no returns, and pay the monthly or yearly taxes. The delay in filing tax returns and payment of tax will be subject to penalties as specified in the Law on Taxation. A tax payer is also entitled to enjoy several rights including fair and reasonable treatment by the tax administration.

Eleventh, tax registration and taxpayer services are the two core functions among the five functions of the General Department of Taxation (GST). Cambodia tax authority has provided powers to large taxpayer department, nine khan tax branches and 24 provincial tax branches to perform the functions of tax registration. From tax administration point of view, it is somehow difficult for the General Department of Taxation to monitor the actual numbers of taxpayers who are registered in each tax branch. As such, difficulty involves in monitoring how the taxpayers comply with the Cambodian tax law and regulation.

Twelfth, the taxpayer service bureaus in the department of large taxpayers as well as nine Khan and 24 provincial tax branches have been playing a vital role in providing various services to taxpayers such as responding the questions of the taxpayers, desk consultations, organizing tax seminars, preparing and issuing of the tax service agent license, etc.

Thirteenth, the office of tax return processing is responsible to receive taxpayers' monthly and annual tax returns. Cambodia has created a clear process in receiving tax returns, but the process on accepting the tax return is still on manual submission of documents. Therefore, the process for tax filling should be modernized by allowing taxpayers to submit their tax returns online which would help in reducing time and cost of taxpayers. In addition, the timeline for filing of tax returns for all types of monthly taxes should be moved to the latest by the 20th of the following month in order to provide time for taxpayers to complete their obligation at once in every month.

Fourteenth, Cambodia tax system has a complete provision to penalize the taxpayers who are not in compliance with tax law and regulations. However, penalty amounts for obstruction of the implementation of tax rules as stated in article 128 should be increased to the level so that taxpayers feel significant for them if they are obstructing the implementation of tax law.

Fifteenth, taxpayers who are not satisfied with the tax assessment, tax reassessment and tax arrears collection as well as other tax decisions and measures of the General Department of Taxation are entitled to file a complaint with the General Department of Taxation within a period of 30 days following the date of receiving notification on decision or other measures of the General Department of Taxation. Even though timeline has been stated in the law to provide feedback or respond to taxpayer's opinion within 60 days, more often it takes longer than the timeline due to delay in the communication on the documentation, appointment for discussion and the uncertainty and unclear interpretation of tax law and regulation on the issues raised by the tax dispute.

Sixteenth, the tax debt collection measure is

enforced depending on the level and timing of debts of taxpayers. The current measure helps tax administration to administer the debt very well. However, a modern technology may help to get more information of taxpayers and improve the effectiveness of tax debt collection by the Department of Tax Debt Collection.

Seventeenth, there were three reforms in 1994, 1997 and 2008 as well as other subsequent minor reforms in tax policy and tax administration. With these reforms, the revenue collection by the GDT had remarkably increased at an annual average of over 20 percent up to 2015. With the growing number of taxpayers and increase of complicated business as well as progress of regional and international cooperation, strengthening of the administration can tackle the major challenges in tax administration.

Eighteenth, during the study period 2004-2015, significant growth rates in the tax amounts of different types of taxes in the country had been observed. In 2004, the total tax revenue was USD 119.91 million which had increased to USD 1,301.52 million in 2015. Thus, the average annual growth rate of total tax revenue in the country was 24.81 percent per annum.

Nineteenth, large changes in the percentage shares of different types of tax revenues to total tax revenue over the period 2004-2015 have been revealed. In 2015, profit tax revenue had the highest percentage share, i.e., 35.37 percent, followed by value added tax revenue 25.28 percent, other tax revenue 14.62 percent, excise tax revenue 10.55 percent and tax on salary revenue 8.88 percent. Thus, the null hypothesis, i.e., Ho 1: "There is no variation in the percentage shares of different kinds of tax revenues to total tax revenue over the study period in Cambodia" is rejected.

Twentieth, during 2004-2015, strong positive relationships between GDP and various types

of tax revenues had been found. Though the overall regression was significant at one percent level of significance, but the values of regression coefficients of various taxes and the corresponding 't' and 'p' values show that not a single individual tax revenue had significant impact on the GDP of Cambodia. As such, the null hypotheses, i.e., Ho 2: "Tax on salary has no significant impact on the GDP of Cambodia"; Ho 3: "Profit tax has no significant impact on the GDP of Cambodia"; Ho 4: "Tax on property rental has no significant impact on the GDP of Cambodia"; Ho 5: "Turnover tax has no significant impact on the GDP of Cambodia"; Ho 6: "Value added tax has no significant impact on the GDP of Cambodia"; Ho 7: "Excise tax has no significant impact on the GDP of Cambodia"; and Ho 8: "Other tax revenue has no significant impact on the GDP of Cambodia", are not rejected.

Twenty first, while individual tax revenues of different types had no significant impact on the GDP of Cambodia during 2004-2015, the total tax revenue was found to have significant impact on the GDP of the country. As such, the null hypothesis, i.e., Ho 9: "Total tax revenue has no significant impact on the GDP of Cambodia" is rejected.

Twenty second, the projected amounts of all taxes in the country had shown an increasing trend during 2016-2025 except the turnover tax. The estimated total tax revenue in Cambodia in 2016 was found to be USD 1436.65 million, which was further expected to increase to USD 3748.77 million in 2025.

On the basis of the research findings, the policy implications and suggestions given are as follows:

First, the General Department of Taxation should revisit the functions of working groups and re-enforce the roles and functions of each department under the General Department of Taxation.

Second, to ensure higher level of efficiency at the operational level of General Department of Taxation, the department should review work procedures within departments as well as *khan* and provincial tax branches for the work which are related to the services to taxpayers as well as the audit process, VAT cross-checking and scope of tax audit for each department and tax branches. Further, the department should upgrade the information checking system through online checking across the country in order to check and improve the effectiveness of work performed by each department and *khan* tax branches as well as provincial tax branches.

Third, there should be performance review of various functionaries responsible for specific tasks on a timely manner. This would help in planning for capacity building as well as developing a higher sense of professionalism in the work place.

Fourth, to ensure greater efficiency at the operational level at the General Department of Taxation, overlapping of responsibilities of departments and functionaries should be removed. Roles and responsibilities of each department, bureau as well as functionary must be very clear and specific to ensure accountability and avoid confusion at the operation level.

Fifth, to ensure effectiveness in work, the General Department of Taxation should continue its efforts towards reform management including recruiting experienced officials with appropriate incentives. It should also consider to establish additional offices for departments at the headquarters and provincial tax branches.

Sixth, the General Department of Taxation needs to be freed from any sort of bureaucratic process for fast decision making. Several layers in the process of decision-making need to be

reexamined in the light of their effectiveness as well as urgency.

Seventh, the provision of minimum tax should be eliminated as many enterprises owing to their small size as well as nature of business may not be able to earn a margin of one percent. Hence, instead of the provision of minimum tax, enhancing their book keeping and account records needs to be done.

Eighth, the Royal Government should revisit the investment and tax incentives to eligible SMEs as well as the QIPs and also grant additional tax incentives to compliance with the companies in order to attract them to apply for Initial Public Offering (IPO) that improves the promotion of capital market in Cambodia.

Ninth, a detail guideline to tax several industries should be studied and implemented in order to collect tax revenue from those industries more effectively. Further, tax incentives should be rationalized to cope with new business environment and competition with neighboring countries and the changes of the world competitive market. The rationalization should also be extended to small enterprises so that they would be more active in their business to generate more revenue and would be willing to be compliant with Cambodian tax rules and regulation. Moreover, to promote Cambodian stock market, the General Department of Taxation should revisit the tax incentives for compliance with companies intending to be listed by applying for Initial Public Offering (IPO) in Cambodian stock market.

Tenth, to help the poor to meet their necessities, the non-taxable supplies such as clean water supply, electric power, education service, unprocessed agricultural products, collection of solid and liquid wastage, etc. should be exempted or imposed at a lower tax rate.

Eleventh, the General Department of Taxation should make a study on the implication of public lighting tax and amend its structure from three percent for all stages of supply of alcoholic drinks and cigarettes to three percent only one time with higher rate or three percent only on margin for distributors and retailers.

Twelfth, the General Department of Taxation should take strong measures against the industries requiring them to maintain proper accounting record so that the taxes on accommodation as well as other applicable taxes can be collected from the industries.

Thirteenth, the General Department of Taxation should revisit or adjust the turnover level of estimate regime or convert all those estimate regimes to be under the real regime system of taxation.

Fourteenth, with regard to the slaughter tax, the tax base should be at market value in order to collect more tax revenue (use an effective manpower) or if government considers to encourage agriculture sector to help poor people (reduce price of meat), it shall consider to eliminate this tax.

Fifteenth, the General Department of Taxation should consider review of the value of stamp and security of stamp. In addition, since this tax is paid every year, reprinting the stamp may also lead to loss of tax revenues. Therefore, an IT support for controlling registered vehicles should be considered to reduce the cost and the timing for paying the tax. To collect tax faster, the General Department of Taxation should appoint option banks and tax offices to sell stamp to taxpayers at convenient places.

Sixteenth, the General Department of Taxation should take more aggressive measures to register all those properties which are subject to property tax. The Ministry of Economy and Finance should also review the value of

property at market price (appropriate price) on yearly basis. There should be tax audit on a certain value of property or location to ensure that the owner of property pays the tax properly.

Seventeenth, keeping the pace of technological development, the General Department of Taxation should consider to introduce e-filing of return which can make return files easier to handle. Further, keeping the expanding number of tax payers in future, more banks should be allowed to perform similar function for the benefit of tax payers.

Eighteenth, to eliminate any sort of confusion, audit report should be standardized and rational. This requires capacity building for responsible functionaries to deal with the task effectively. Further, to minimize the complaint and provide timely service to the tax payers, arbitration should be done faster.

Nineteenth, to collect debt in the interest of the country, all legal procedures should be followed irrespective of any considerations. In addition, to ensure voluntary responses to tax payment among people, awareness development programs at community and business association levels should be carried out. In this direction, including government, private sector as well as NGOs have to play a definite role.

Twentieth, tax audit on company's business transaction helps tax administration to manage tax situation of taxpayers and increases the taxpayers' compliances, a proper schedule for each type of tax audit with qualified tax auditors should be arranged before the audit process at taxpayer's premises. Besides, a proper scope of work and timeframe for tax audits including desk audit, limit audit and comprehensive tax audit should be published publicly for taxpayers so that they will be willing to cooperate with the tax administration

more effectively. Imposing penalties on taxpayers who are not in compliance with tax regulation found in the tax audit process will also help to enhance the tax revenues.

Twenty first, providing wide power to tax administration for tightening tax debt collection is also one of the methods in collecting taxes from those taxpayers who are having tax debts and do not want to settle the tax debts.

Twenty second, limited capacity of tax officers of each department and the unclear rules and procedures of tax regulation in certain areas made the system ineffective. Thus, a regular tax training program should be conducted for the tax audit officers to improve the capacity of tax officers as well as build relationship among themselves in order to effectively provide good tax audit judgments to taxpayers.

Twenty third, the General Department of Taxation should create modern information technology system to monitor the tax administration across the countries. Information exchange between the departments on all taxpayers' should be available in the system for all tax officers in charge when needed. The information technology system should also be created for monitoring the human resources and their effectiveness at work.

Twenty fourth, a specific promotion plan for officers who have performed well should also be in place since it will motivate tax officers to work more effectively and efficiently. A fast process in recruiting new qualified officers should also be considered. This will help in improving the commitment level of work of the existing officers as well as managing the workload that may occur due to the shortage of tax officers.

Twenty fifth, to improve tax compliance with

taxpayers, awareness of tax system as well as rules and procedures of Cambodian tax should be generated among all people including students, employees and entrepreneurs. Having qualified tax service agent to help spread out the proper tax obligation to their customers would help tax administration to increase revenues as well. The General Department of Taxation should take disciplinary action against persons providing information to taxpayers without tax service agent license and encourage persons who passed the tax services agent examination to apply for the certificates of tax service agent. At the same time, a proper training program for tax service agent should be in place to ensure the quality of the agents so that they can be a good partner with the General Department of Taxation for improving tax compliance and in collecting tax revenues as well.

Twenty sixth, based on the empirical findings, first, the government should adopt a fiscal policy measure that concentrates on enlarging the tax base to increase tax levels without increasing the tax burden. This can be through enhancing the tax base on excise duties to ensure equity and reduce consumption of goods with negative externalities on the lives of citizens.

Twenty seventh, based on the positive relationship between tax and economic growth, the government should efficiently use the tax amounts it collects to spur growth. This would boost per capita income and thereby the disposable income that would in turn increase demand and eventually raise tax levels on sales/VAT and excise duties.

Twenty eighth, the government should provide higher social amenities to people as this will boost the level of tax compliance in the country. Similarly, to enhance the tax base, employment opportunities should be created and a productive environment for

entrepreneurship and innovation should be made in the country.

To conclude, the present study is a modest attempt to analyze the structure and functions of the General Department of Taxation along with the roles and responsibilities of key positions of the various departments under the General Department of Taxation, Royal Government of Cambodia. In addition, it analyzes tax policy, different types of taxes and their implications in Cambodia. Moreover, the system of tax administration in Cambodia has been discussed in this study. More importantly, the study has examined the long standing

debate on the relationship between taxation and economic growth. As good tax governance is an essential ingredient of good financial governance for effective mobilization of resources to promote development, accountability and transparency, research in this direction would certainly help academics, researchers, administrators, service providers, planners and policy-makers in developing suitable plans and policies of the Royal Government in strengthening the tax system in the country. Apart from academic, the study is very much useful to policy makers who will ensure prudent use of tax revenues to achieve desired level of economic growth.

A Study on ASEAN Trades and Policies (With Special Reference to Cambodia)

Meuk Kimsroeun*

ABSTRACT

Title	A Study on ASEAN Trades and Policies (With Special Reference to Cambodia)
Research Scholar	Meuk Kimsroeun
Supervisor	Prof. Tapas Ranjan Dash
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ASEAN trade is expected to strengthen economic growth among ASEAN countries. Considering the importance of international trade in economic growth, the present study has made an attempt to analyze ASEAN trade with special reference to Cambodia for the period of ten years, i.e., from 2001 to 2011. Further, an analysis of the policies relating to trade of both ASEAN and Cambodia has been carried out in order to examine the trend of trade during 2012 to 2022.

The study sought to provide answers to the following questions:

- i. What the factors that determine international trade?
- ii. What were the variations of ASEAN and Cambodia's trade during 2001 to 2011?

- iii. What will be the future trend of ASEAN and Cambodia's trade during 2012 to 2022?
- iv. What roles do the agencies, associations and government play to promote ASEAN and Cambodia's trade?
- v. What measures are needed to be taken by ASEAN and Cambodia to enhance the future trade?

The study has focused on the following objectives:

- i. To review the literatures that identify and analyze the factors influencing international trade.
- ii. To analyze the trade variations of ASEAN and Cambodia during 2001 to 2011.

* Research Scholar, Build Bright University, Cambodia. E-mail: kimsroeun79@gmail.com

- iii. To study the future trend of ASEAN and Cambodia's trade during 2012 to 2022.
- iv. To analyze the policies and procedures of several agencies, associations, and government to promote ASEAN and Cambodia trade.

The study had attempted to test the following hypotheses:

- a) Ho1: There is no year-wise variation of ASEAN and Cambodia's trade values during the study period.
- b) Ho2: There is no significant difference between the actual and estimated ASEAN and Cambodia's trade over the periods under study.

Both descriptive and quantitative analyses were carried out in the present study. Factors influencing international trade as well as policies and procedures of several agencies, associations and governments involved in promoting ASEAN and Cambodia's trade were analyzed descriptively. Quantitative analysis was undertaken in analyzing the variations of ASEAN and Cambodia's trade over the period 2001 to 2011 along with projections of trade from 2012 to 2022.

ASEAN and Cambodia had the potential and high bargaining power in trading and co-operating activities with large number of partners in the world. As of 2011, the ASEAN region had a population of about 604 million, a total area of 4.5 million square kilometers, a combined Gross Domestic Product of almost USD 2 billion, and a total trade of about USD 2.4 billion. The region is an important economic force in the world today. Along with ASEAN, Cambodia had almost USD 7,790 million GDP with nearly 14.5 million people in 2011. With such economic forces, the region had a high bargaining power in the world economy and possesses the potential to identify

the economic cooperation among its member nations and neighboring countries. The ASEAN Vision 2022, adopted by the ASEAN leaders on the 30th Anniversary of ASEAN, agreed on a shared vision of ASEAN as a concert of Southeast Asian nations, outward looking, living in peace, stability and prosperity, bonded together in partnership for dynamic development and in a community of caring societies.

International trade of ASEAN along with Cambodia revealed that the intra-ASEAN trade was lower than the extra-ASEAN trade potentials. It was found that the total trade grew constantly at about 12 percent during 2001 to 2011. USA, EU-27, Canada and Australia were the main export destinations for ASEAN. In addition, USA and EU-27 also traded with Cambodia amounting to USD 17,869.82 million and USD 7,601.22 million respectively over the study period. Both ASEAN and Cambodia had trade surplus with USA and EU-27, but experienced trade deficit with China, Japan, South Korea and Russia from 2001 to 2011.

ASEAN earned a sum of USD 1,242,286 million by exporting top 20 products to all over the world. The commodities shared 47.7 percent with the total ASEAN exports and the other subordinate export products accounted for 52.3 percent in 2011. The top grouping commodities were electronic integrated circuits, petroleum oils, gases and other gaseous hydrocarbons, automatic data processing machines and units thereof, natural rubber, coal & briquettes & ovoids, parts & accessories of computers & office machines, diodes & transistors & similar semiconductor devices, telephone sets, printing machinery, parts & accessories of motor vehicles, gold, electrical machines and apparatus, rice, discs & tapes & solid-states non-volatile storages devices, monitors and projectors, articles of

jewelry and parts thereof and polymers of ethylene.

In 2011, Cambodia earned a sum of USD 6,635.9 million by exporting top 10 products to all over the world and more than half of the total exports to G8 member states. The commodities were identified as natural sands of all kinds, rice, manioc (cassava), and similar roots and tubers, fish, women's or girls' suits, fuel wood, men's or boys' suits, natural rubber, and others.

ASEAN also spent an amount of USD 1,146,306 million in 2011 to import the top 20 commodities from the world. The commodities had accounted for 46.4 percent of the total imports and the rest was 53.6 percent in 2011. The commodities were identified as petroleum oils, electronic integrated circuits, bituminous minerals & crude, electric appliance, gold, unwrought, parts & accessories of computers & office machines, automatic data processing machines and optical reader, parts & accessories of motor vehicles, petroleum gases and other gaseous hydrocarbons, semiconductor devices, printing machines, aircraft, spacecraft & launch vehicles, helicopters, satellites, motor cars & vehicles, turbo-jets, polymers of ethylene, etc.

Cambodia paid USD 6,080.82 million in 2011 for importing top 10 products from all over the world and more than half of the total imports were from Intra-ASEAN. The commodities were identified as petroleum oils and other various oils obtained from bituminous minerals, other than crude; other knitted or crocheted fabrics; knitted or crocheted fabrics of a width not exceeding 30 cm.; other woven fabrics of synthetic staple fibers; motor cars and other motor vehicles principally designed for the transport of persons; yarn (other than sewing thread) of synthetic staple fibers, not put up for retail sale; cigars, cheroots, cigarillos and cigarettes, of tobacco or of tobacco

substitutes; electrical apparatus for line telephony, including line telephone sets with cordless handsets and telecommunication apparatus; videophones; medicine; dumpers designed for off-highway use, etc.

The maximum variation of ASEAN trade was 33.11 percent in 2010 and the minimum variation was 3.30 percent in 2002. The annual average percentage variation was approximately 14 percent. The maximum variation of Cambodia's trade was 28.47 percent in 2003 and the minimum variation was 0.50 percent in 2004. The average percentage of annual variation was approximately 16 percent.

The estimated values of trade during 2001 to 2011 had shown a continuous rise starting from USD 635,194.90 million in 2001 to USD 2,271,050 million in 2011 for ASEAN trade while it had increased from USD 3,562.14 million in 2001 to USD 13,576.32 million for Cambodia's trade. The actual trade value during 2001 to 2011 had also increased from USD 690,990.70 million to USD 2,388,592 million for ASEAN trade and from USD 3,287.62 million in 2001 to US\$ 14,479.66 million for Cambodia.

There has been a continuous increase in ASEAN trade during 2012 to 2022. The predicted value of ASEAN trade in 2022 reached USD 4,867,197 million, an increase of nearly double as compared to the predicted trade value of USD 2,472,574 million in 2012. Meanwhile, the predicted value of Cambodia's trade had reached USD 39,115.58 million in 2022, an increase from the trade value of USD 15,269.34 million in 2012.

The potential partners of ASEAN and Cambodia in the world for trading and investment mostly remained the same. USA, EU-27, Canada, Australia, and New Zealand were the main export destinations for ASEAN

and Cambodia while China, Japan, South Korea and Russia were the main international suppliers for ASEAN and Cambodia.

International trade between the world and ASEAN along with Cambodia, in general, was lower than extra-ASEAN countries. However, signs of upward trend were seen over the past several years. There were high prospects for trade in the future given the high complementarity among ASEAN nations with EU-27, USA, Canada, Australia, and others. The imported products were mostly related to manufactured products such as electronic devices, petroleum oils, machines, parts and accessories of motor vehicles, and others; especially from China, Japan, South Korea to ASEAN and Cambodia. The exported products were mostly natural sands, rice, Manioc (cassava), women's or girls' suits, men's or boys' suits, fuel wood, natural rubber, and others.

It is expected that ASEAN and Cambodia's trade will continue to increase to nearly double of their worth by the next decade. However, the policies and procedures were still made trade barriers for both ASEAN and Cambodia because some tariffs on few items were not eliminated. Some policy instruments were also not applied even though there was an agreement to justify for WTO requirements.

To enhance the international trade, after 2002 ASEAN had agreed with the Common Effective Preferential Tariff Scheme for ASEAN Free Trade Area in which the tariffs on Intra-ASEAN regional trade was not more than five percent for almost all products in the inclusion list. The free trade area covered all manufactured and agricultural products. Export duties were imposed on an MFN basis and hence its ASEAN partners were not exempted from these taxes. According to the authorities, the draft law on trade remedies followed closely the WTO safeguard and anti-dumping

agreements. With regard to customs, in order to meet WTO requirements, several laws and regulations had been enacted such as law on customs promulgated on 20 July 2007 which consisted of 13 chapters and 80 articles and supporting regulations which consisted of one sub-decree (Anukret), 25 ministerial prakas and two guidelines.

International trade procedures were laid out in Sub-Decree No. 131 (2006) and under Sub-Decree No. 59 (2008), the TPD has the following duties and responsibilities: (i) inspection of imports and exports, jointly with Customs; (ii) consumer protection through product safety and suppression of fraud; (iii) export certification to meet importing country requirements; (iv) checking of compliance with international standards; (v) review of health and safety products from production through commercialization, and submission to competent authorities; (vi) the control of products and services on the markets; (vii) management of MoC laboratory product testing facilities; (viii) provision of a commercial inspection service; (ix) collection of inspection fees relating to import/export quality testing; and (x) secretariat of National Codex Committee and SPS National Enquiry Point.

Thus, ASEAN as well as Cambodia need to play crucial roles in creating a favorite environment for facilitating the international trade, especially, the international trade policy and international relations with the western countries to attract more investments in Cambodia.

In conclusion, ASEAN including Cambodia possess is the potential region and has high bargaining power in trading and co-operating economic activities with many partners in the world. While USA and EU are the main export destinations for ASEAN and Cambodia, countries in Asia particularly neighboring

countries are the main international suppliers for ASEAN and Cambodia. Thus, ASEAN and Cambodia in the future will become most

attractive destinations for trade and investment due to the existence of enough potentials in the region.

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