



**FACTORS AFFECTING SOCIAL MEDIA ADOPTION DECISION OF MSE  
LEADERS**

**(A CASE OF MSEs IN ETHIOPIA)**

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A FINAL PROJECT SUBMITTED TO ADDIS ABABA UNIVERSITY COLLEGE OF BUSINESS  
AND ECONOMICS THE SCHOOL OF COMMERCE IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN BUSINESS LEADERSHIP

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

SCHOOL OF COMMERCE

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JUNE, 2023

ADDIS ABABA, ETHIOPIA

## ***Abstract***

*The aim of this research work is to identify factors that affect social media adoption decision by MSE Leaders in Ethiopia. MSE sector in Ethiopia is the second largest employers next to Agriculture. Despite much support to the sector by the Government among the main problem of these MSEs have are lack of market for their products and services, capital shortage and industry information scarcity. Utilization of Social media for business efficiently may create national as well as international market opportunities, Makes it easy for the MSEs to find investors to solve their capital problems and they can easily get industry and product information and share theirs easily. Therefore, Adoption of social Media by the SMEs can be strategic business decision.*

*The research employed existing technology adoption model to explore the factors that can affect social media adoption decisions. Standard instruments have been used to test three models TOE-TAM integrated model, TAM model and TOE frameworks. The study employed existing model and instruments which are validated through factorization to fit our research context.*

*As a result, TOE Model returned Relative advantage, Observability, Experience and social influence social media adoption decision by SME leaders in Ethiopia. Telegram has been found to be the most popular of social media platform among MSEs as a business platform. The study has assessed the level of utilization of Social media by MSEs in Ethiopia.*

***Key words:*** *MSEs, Social Media Adoption, TOE framework, TAM, strategic business decision, social media. MSE leaders*

**Addis Ababa University**  
**College of Business and Economics**  
**School of Commerce**

**APPROVALS**

The undersigned certify that they have read the Final Project submitted by **Fasil Ayele**, entitled "**Factors affecting social Media Adoption decision by MSE leaders (A case of MSEs in Ethiopia)**" and hereby recommend to Addis Ababa University to accept it in partial fulfillment of the requirements for the award of the Masters in Business Leadership degree.

**Approved by Board of Examiners**

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Name of Advisor                                      Signature \_\_\_\_\_ Date \_\_\_\_\_

## **DECLARATIONS**

I, **Fasil Ayele**, declare that this Final Project is prepared in partial fulfillment of the requirements for the Master of Arts in Business Leadership degree. A Study on "**Factors Affecting Social Media Adoption decision by MSE leaders (A case of MSEs in Ethiopia).**" This project paper is my work and has not been submitted for a degree at any university. All sources of information utilized in the thesis have been properly credited. With the help of my advisor's advice and direction, I was able to complete it on my own.

Name: **Fasil Ayele**

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## LETTER OF CERTIFICATION

This is to confirm that **Fasil Ayele** completed his Final Project work under my direction and supervision on the topic "**Factors Affecting Social Media Adoption Decision by MSE leaders (A case of MSEs in Ethiopia).**" As a result, I can guarantee you that his work is relevant and of sufficient quality to be considered for the Master of Arts in Business Leadership award.

Name of Advisor \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_\_

## **ACKNOWLEDGEMENT**

I would like to thank my thesis advisor Dr. MAHIR JIBRIL (PhD) for his continued support throughout the process. His assistance and involvement to shape the research in the right Direction has taken my sincere gratitude. I want to acknowledge his dedication, patience and understanding has played a great role in bringing this work to this level.

I would also like to thank family members, Friends and friends of friends who has helped me during data collection without you the work would have been harder, time taking and costly. Some special friends Mekoya, Ayano and my sister Mhired, you deserve respect for your continued encouragement and support.

My very profound gratitude goes to my wife for tolerating the work load and financial stresses I have put you through during the course of the study and the research. You are just the best! My kids you are all time inspirations to me in every walk of life. My parents, your expectations always motivate me and thank you!

## ABBREVIATIONS

Abbreviation	Full Term
B2B	Business to Business
ICT	Information Communication Technology
EDI	Entrepreneurship Development Institute
EDC	Entrepreneurship Development Center
SM	Social Media
SMA	Social Media Adoption
SNS	Social Networking Sites
LR	Logistic Regression
TOE	Technological Organizational Environmental
DOI	Diffusion of
TAM	Technology Acceptance Model
MSE	Micro and Small Enterprises

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# CHAPTER 1

## INTRODUCTION

In this Introductory chapter a quick introduction of research background, the research aim, objectives and questions will be discussed. This research will have boundaries of play which will be discussed in the literature Scope section and the limitations of the research will also be discussed.

### 1.1. BACKGROUND OF THE STUDY

One of game changing phenomena of technological advancement is social media. The emergence of social media has transformed people to people; organizations to customers; leaders to followers' way of communication. Globally, researches have shown that there is an increasing trend of businesses using social media. (Martin Smits, 2013) (Rahul Pal, 2021). We have witnessed many corporations using social media as a channel for marketing, Brand promotion and valuation; customer relations etc. 140 million organizations, for example, use Facebook products to reach potential customers every month in 2021 (Rahul Pal, 2021)

Globally 4.5 billion people are believed to be active on social media.(Insights) Facebook is the biggest social media with 2.93 billion active users. Twitter, you tube, tiktok, instagram, telegram, whatsApp, wechat, and QQ are among the most popular social media platforms. Social media applications, therefore, have created a virtual environment of bigger population. It is witnessed that this virtual environment has emerged very powerful in our day to day life, entertainment, politics & business. The number of active social media users estimated to be 6.5 million by 2022. (statista) The rate at which the social media users increase from 1.5 million in 2014 to 6.5 in 2022 shows that social media is not a thing to undermine in Ethiopian businesses.

The major benefits of social media for business are improved customer insight, better consumer service, cost efficient marketing, establishing brand awareness, and increased sales. (Agarwal, 2018).

Businesses advertise their new products, collect and survey customer feedbacks and demands for new products and use social media to create brand awareness, brand loyalty and brand value. (Yogesh K. Dwivedi., 2021). SMEs who are stragling from capital shortages, lack of best talents

and knowledges, lack of communication and supply networks may use social media to narrow their gaps from using social media advantages. The emergence of social media has made it a challenge for business leaders to cope up with the dynamism it brought into the business. Therefore, it's never early or late for the Leaders to adopt social media as a business platform.

Social media adoption is currently being considered as a major component in digital transformation of businesses. (Galindo-Martín, 2018) Most Business leaders and Managers, however, lack the specific knowledge to understand how to adopt and use these digital advancements in business. Social media, globally, is one of the most studied areas in business and community. In Ethiopia, however little is known about social media and business. (Tadesse, 2021) (Demiss, 2021).

According to CSA of Ethiopia (2005), MSE is the second largest employment-generating sector next to agriculture. For instance micro and small scale manufacturing industries employed more than eight fold (740,000 persons) to that of medium and large scale manufacturing industries (90,000 persons) in Ethiopia in 2005 (Abagissa, 2021). MSEs have been proved to impact rapid and sustainable economic growth in successful developing countries due to their size, location, capital investment and more employment (Getachew Ayalu, 2022). The importance of the MSE sector can be best elaborated using the report from CSA, 2005 that the sector contributed 3.4% to the GDP and form the share of the manufacturing sector the MSE take 52% in its contribution to the GDP (Gezahegn Sime, 2021)

Despite these contribution and promising impact to the economy MSEs in Ethiopia face challenges with respect to capital, working place, Finding customers , access to information in the industry, knowledge and skill to list some according to prior researches (Abagissa, 2021; Getachew Ayalu, 2022; Gezahegn Sime, 2021; Mengistu, 2018). As discussed above the opportunities offered by social media to businesses and the challenges the MSEs are facing have important intersecting points. Therefore, since social media can be used to solve many challenges for these MSEs directly or indirectly why are the MSEs not onboard? What affects the leaders of the MSEs from adopting this technology?

In this research, the factors affecting social media adoption decision as business platform by SME leaders are explored in SMEs in Ethiopia. The research has found out factors which significantly affected social media adoption decision by MSE Leaders in Ethiopia.

## **1.2. STATEMENT OF THE PROBLEM**

To date many more than average businesses globally are already on social media. And social media penetration in to the business world is ever increasing. A growing number of brands are using social media as a good opportunity to leverage consumer exposure and generate greater sales. (Duong Hanh Tien A. A.-K., 2019). According to different International organizations like world Bank, ITU, Statista 20 % of Ethiopians have access to the internet as of 2021. And Internet users increased at 250% in decade's time and grew at a rate of 2.5% in recent years per annum. About 40 % of the internet users are on social media and growing at a very encouraging rate for instance from January 2018 to January 2019 the social media users increased by 2 million. However, Businesses in Ethiopia didn't take social media adoption seriously (Tadele, 2021). Few companies like Ethiopian airlines, few Commercial Banks, few breweries, Ethiotelcom took social media seriously.

MSEs are recognized globally as economic and development Instruments and regarded as spring board for long-term growth. (Oppong, 2014). The challenges put forward for success and performance of MSEs in Ethiopia include knowledge and skills, access to information about industry and products, Access to customers or market, Access to sales location and manufacturing places, and mainly access to capital both establishment and working (Abagissa, 2021; Getachew Ayalu, 2022; Gezahegn Sime, 2021; Mengistu, 2018). SME Leaders can use social media in value creation for their businesses. SMEs can also make use of features of social media to win customers, market their services and products, understand their customers with minimum budget.

To benefit from the advantages offered by social media and add value to the business SME leaders should not have been reluctant in Adopting social media as a Business platform. Studying the factors that affect the MSE leaders from adopting social media will help in motivating the leaders towards Social media adoption decision.

## **1.3 RESEARCH QUESTIONS**

The research tries to shed light to some of the key research issues/questions pertinent to social media adoption decision as a business platform by MSE Leaders including but not limited to:

- Which factors affect social media adoption decision by MSE leaders in our context?

- Do existing models used in the literature to study technology adoption decision works for studying Social Media adoption in developing economy like Ethiopia
- What are the main uses of social media among MSEs in Ethiopia?
- What is the level of social media adoption by MSEs in Ethiopia?

The research also answers other questions like ‘what is popular social networking platform as a business platform by MSEs in Ethiopia?’

## **1.4 RESEARCH OBJECTIVES**

Standing on the arguments made to justify why both MSEs and Social media adoption are points of interest and significance the general and specific objects of the research are given below

### **1.4.1 GENERAL OBJECTIVE**

The general objective of this research is to explore factors affecting social media adoption decision by MSE leaders in Ethiopia.

### **1.4.2 SPECIFIC OBJECTIVE**

- To understand the current social media adoption level among MSEs in Ethiopia
- To empirically test existing technology adoptions models and instruments and validate them to fit our context.
- To explore the factors affecting Social Media Adoption decision by MSE leaders using validated models
- To Explore the model that works fine for our context
- To explore the level of understanding about uses of social media by SMEs in Ethiopia

## **1.5 SIGNIFICANCE OF THE STUDY**

Social media closes the gaps MSE leaders list as a challenge to their success like finding market and access to information. Finding out barriers and motivators for adopting social media will have conceptual as well as practical significance to MSEs in benefitting from the opportunities that have arrived with social media.

### **1.5.1 CONCEPTUAL & EMPIRICAL SIGNIFICANCE**

Theoretically, this study used existing theories of technology adoption with established relations developed between variables. The studies done so far treated MSEs in much better economies than Ethiopia. With this research the fact that the theories and their established relations could be extended to such developing economy like Ethiopia is assessed and the result will enrich the theories and established relations with new findings or reinforcing the already existed ones.

### **1.5.2 PRACTICAL SIGNIFICANCE**

The primary relevance of this study is for SME entrepreneurs, business leaders to be used as reference for planning and implementing social Media adoption. The outcome of the study will also help social media marketing practitioners, social media managers and Business consultants to be used in their attempt to help their customers in adoption of social media. The outcome of the study will be helpful to SME support bodies like policy makers, TVET institutions on how to include social media in their Governance and support Directives.

## **1.6 SCOPE OF THE STUDY**

In the interest of time and resources, to make it more manageable, it is very important to delimit the scope of the study.

The conceptual scope of the study is limited factors under technological context, Environmental context, organizational context and Perceived usefulness and perceived ease of use. The models under study are TAM-TOE integrated while other Theories and the scope of variables they address are not covered.

The study identified social media adoption predecessors using existing models and instruments. The models and instruments used have been validated and factorized to fit our sample dataset.

Using validated models and instruments regression between factors and social media adoption decision has been carried out.

Data collection has been made using both online and paper printed surveys. There is no geographic limitation for MSE to be considered for this study. Online survey is carried out without geographic limitation and social media networks have been used but in Ethiopia. However paper printed surveys were limited to selected towns using convenience as a criteria for selection. The study included towns like Jinka, Jimma, Addis Ababa, Arbaminch, Wolaita sodo, Bahirdar.

### 1.7 LIMITATION OF THE STUDY

. The sampling technique is purposive to meet the research target but bias and chance of non-representativeness still holds here as a limitation or risk. Since the study used existing models and instruments which have been used for different research settings and contexts there is a risk of perfect results.

### 1.8 DEFINITION OF KEY TERMS

<b>Business Strategy</b>	Is the plan and action taken in business organizations in order to achieve the bigger picture or goal of the business ultimately and now?
<b>Social media</b>	Internet applications serving as a virtual platform of socialization and communication
<b>Social Networking Sites (SNS)</b>	Social networking sites like facebook, twitter, youtube, instagram, tiktok
<b>Adoption of social media</b>	Accepting social media and deciding to use social media as a business platform
<b>MSE</b>	Micro and small Enterprises
<b>Perceived usefulness (PU)</b>	The degree to which a person believes that using a particular system would enhance his or her job performance
<b>Perceived ease of use (PEOU)</b>	The degree to which a person believes that using a particular system would be free of effort

Table 1: Definition of Terms

## **1.9 ORGANIZATION OF THE STUDY**

The study will be organized in five chapters. The first chapter will be the introductory chapter which consists of general introduction, research background, problem statement, and the golden threads of research namely, research aim, objective and question and the research significance. The second chapter will be a literature review chapter where the core concepts around the research project will be briefly presented. This chapter mainly discusses the works of other researchers in the subject area to evaluate their findings and articulate the research gaps perfectly. The third chapter will be where the research method will be detailed. Here the rationale behind the type of research selected will be elaborated and why qualitative research method is in choice. The methods employed to decide sample size and select samples will be discussed. Data collection methods are decided and data collection tools will be produced or adopted. The data analysis method selection and the rationale behind the choice will also be discussed. The fourth chapter is the actual body of the research where actually the real research work is reported. The data collected the analysis the tools used for the data collection and all the rest will be discussed. Discussion of results is also part. The final chapter will obviously discuss conclusions about the research work and future recommendations.

## **CHAPTER 2**

### **REVIEW OF RELEATED LITREATURE**

This chapter is about the review of the related literature on social media adoption issue and MSEs. Social Media, its relation with business and how it affected business leadership has been covered. The MSEs and how their leaders decision to wards social media adoption has been reviewed. The chapter also discussed important theories and models for studying social media adoption. The chapter finalizes by discussion of the conceptual framework of the study.

#### **2.1 INTRODUCTION**

Social media has emerged as impactful digital land scape where more than half of the world population has boarded on. More than 140 million businesses have engaged on social media according to Pourkhani & Baher. (Massoud, 2019). In their study Bhagwat & Goutam (2013) have shown that social media sites are growing and providing facilities to both business organizations and the people. Kaplan et. Al.(2010) discussed in his work that Social media is already a top agenda for business executives. Businesses throughout the world are constantly adopting social media even if they did it for different reasons.

There are a variety of social Networking Sites (SNS) for businesses to use in order to connect with business partners and customers. (Svensson, 2018) However different social Networking Sites are best fit for different purposes and content types; some are best fit for Business, some are best for communication, some are best fit for uses internal to business and some may be general. Content wise SNS are good for either pictures, video , micro blogging, professional life, or general. Businesses also select between the right SNS to adopt for the specific purpose they intend. (Michaelidou, 2011)

The advantages businesses can get from using social media, some policy obligations and trendiness can be primary factors why Businesses in general should adopt social media. For instance (Svensson, 2018) mentioned social media can be used to create value in all stages of product life cycle as a reason why businesses should adopt social media; (Siamagka, 2015)also raised popularity of social media among individuals, apprehended usefulness of social media are primary reasons for companies to adopt social media; the fact that social media allows

customers to reach the source easily makes a good reason for adopting social media. (Mäntymäki, 2016) demonstrated internal uses of social media that can also be a reason for adopting social media for corporate purposes.

There are also reasons and problems why organizations may not adopt social media. The main barriers are that organizations need social media to be free but the truth is social media needs resource to be successful (Andersson, 2017), businesses think confidential information are probably leaked or hacked (Wang, 2016), lack of knowledge to use social media as a business problem and the area of business operations may not go along with social media (Siamagka, 2015) Social media has emerged as impactful digital landscape where more than half of the world population has boarded on. More than 140 million businesses have engaged on social media according to Pourkhani & Baher. (Massoud, 2019). In their study Bhagwat & Goutam (2013) have shown that social media sites are growing and providing facilities to both business organizations and the people. Kaplan et. Al.(2010) discussed in his work that Social media is already a top agenda for business executives. Businesses throughout the world are constantly adopting social media even if they did it for different reasons.

## **2.2 SOCIAL MEDIA (SM)**

Social Media is an advance in internet technology where multiple people interact and share information simultaneously (Bingham, 2015). O'reilly has identified the social media web as WEB 2.0 to differentiate from WEB 1.0. WEB 2.0 has brought a transition from a manager generated content era to user generated content era. Social media may also be described as many to many, participatory, user owned, conversational, open, mass collaborative, relationship oriented and free and easy to use. (Khan, 2015); (Martin Smits, 2013) An internet application or website need to fulfill some basic feature to be called social media such as must contain user profiles, must allow user content and a method that permits users to connect with each other and allow comments on each other's posts and join virtual groups based on common interests. (Paquette, 2013)

Social media is used by more than 3.8 billion people which are half of the world population. In 2019, on average, social media users spent two hours and 24 minutes a day. (Rahul Pal, 2021). Facebook is the biggest social media with 2.93 billion active users. Twitter, you tube, tiktok,

instagram, telegram, whatsapp, wechat, and QQ are among the most popular social media platforms. Table 2.1 summarizes relevant information about these popular social media networks

Social media applications therefore have created a virtual environment of bigger population. It is witnessed that this virtual environment has emerged very powerful in our day to day life, entertainment, politics & business. The number of active social media users estimated to be 6.5 million by 2022 in Ethiopia. (statista) The rate at which the social media users increase from 1.5 million in 2014 to 6.5 in 2022 shows that social media is not a thing to undermine in Ethiopian businesses. (statista).









	Network	Number of users	Demographic information		More information
	Facebook	1.28 billion users	65% female / 35% male	48% of users aged 18-34, 31% aged 35-54	Social network leader with largest audience, large focus on interaction with friends and family
	Twitter	255 million users	62% female / 38% male	66% of users aged 15-34	Open network geared towards conversations via short messages (140 characters maximum)
	LinkedIn	300 million users	39% female / 61% male	60% of users aged 25-54	Social network geared towards building professional connections to aid career development
	Google+	1 billion users	30% female / 70% male	All users have Google accounts	Social network arm of Google's product offering, heavy visual focus.
	Pinterest	70 million users	83% female / 17% male	45% of users between 35-54	A place to build virtual collections of visual content pertaining to personal interests
	Instagram	300 million users	68% female / 32% male	90% of users under 35 years old	Platform for sharing visual content
	YouTube	1 billion users	Reaches more U.S. adults than any cable network	Predominant user base is 18-34 years old	Platform for hosting and sharing video content
	Foursquare	45 million users	40% female / 60% male	80% of users between 18-43 years old	Social network focused on geo-location based interaction

Table 2 : Popular social media Networks(Hootsuite, 2015)

## 2.3 SOCIAL MEDIA AND BUSINESS

Social media is an important tool for all businesses because it allows businesses to communicate with, listen to, and learn from their customers in a way they have never been able to do before (Grewal, 2013). Social media creates the potential market and an avenue to make an impression about the business thereby building credibility, brand image, and reputation. The number of users of social networking sites makes it attractive to marketers and organization alike to venture to social media. (R. Venkateswaran, 2019)

In social media studies, researchers have long recognized the importance of social influence in affecting consumer decisions, and recent studies have shown that people's connection patterns and the strength of social ties can signify the intensity of social interactions (e.g., Aral and Walker 2014; Katona et al. 2011).

Social media have generated three fundamental shifts in the marketplace.

1. Social media enable firms and customers to connect in ways that were not possible in the past. Such connectedness is empowered by various platforms, such as social networking sites (e.g., Facebook), micro blogging sites (e.g., Twitter), and content communities (e.g., YouTube), that allow social networks to build from shared interests and values (Kaplan and Haenlein 2010).
2. Social media have transformed the way firms and customers interact and influence each other. Social interaction involves "actions," whether through communications or passive observations, that influence others' choices and consumption behaviors (Chen et al. 2011). Nair et al. (2010) labeled such social interactions as "word-of-mouth (WOM) effect" or "contagion effects." Muller and Peres (2019) argue that social interactions rely strongly on the social network structure and provide firms with measurable value (also referred to as "social equity").
3. The proliferation of social media data has made it increasingly possible for companies to better manage customer relationships and enhance decision making in business (Libai et al. 2010); (Fang Fang Li, 2020). Social media data, together with other digital data, are widely characterized by the 3Vs (i.e., volume, variety, and velocity), which refer to the vast quantity of data, various sources of data, and expansive real-time data (Alharthi et al.

2017); (Fang Fang Li, 2020). A huge amount of social media data derived from different venues (e.g., social networks, blogs, forums) and in various formats (e.g., text, video, image) can now be easily extracted and usefully exploited with the aid of modern information technologies (Moe and Schweidel 2017); (Fang Fang Li, 2020). Thus, social media data can serve as an important source of customer analysis, market research, and crowdsourcing of new ideas, while capturing and creating value through social media data represents the development of a new strategic resource that can improve marketing outcomes (Gnizy 2019); (Fang Fang Li, 2020)

The other issue with social media is that marketing and promotion are cost effective with social media. Studies have shown even though many organizations do not analyze this very well, (David M Gilfoil., 2015)

#### **2.4 SOCIAL MEDIA AND BUSINESS LEADERSHIP**

The influence of Social media on Business leadership ranges from internal environment to external environment. Internally social media poses challenge to the Leadership and management because it affects productivity of employees and leadership style of leaders. Productivity of employees is affected by social media in that employees either in that they waste their work time or they spend their sleep time browsing and lose energy during working hours. Social media affects leadership styles of leaders in those employees have real time information of peoples working for competitors. They will request the leisure and the treatment in the competitor companies to be done for them here. This poses a challenge for Leaders to proceed with their styles. Employees also disclose their grievances on social Medias; information which are used by competitors and may also be not good for the company also. However, the leaders of companies also use social media as an opportunity in communication with their employees.

Externally, organizations use social media to engage with customers and stakeholders and easily get informed about competitor activities and collect strategic data of competitors easily. This helps business leaders in strategic planning to design competitive advantage over their competitors. Communication with customers facilitate organizations easily get customer feedbacks, new product information. Marketing and sales activities can be carried out in social media. Or organizations face negative impacts of social media through eWOM spread

uncontrollably with negative news and information. The negative messages may have offensive contents, defaming contents and may damage brand reputation. (Bari courts., 2020). Business leaders and managers should design a social media strategy that can make use of the opportunities and fight back the negative impacts of viral eWOM.

## 2.5 MSE IN ETHIOPIA

MSE stands for Micro and small enterprises. There is no universally agreed boarder for which businesses are called Micro enterprises or small enterprises. Countries, institutions or agencies defined differently to suit their own concepts and operations. (Abagissa, 2021) However there is a globally accepted fact that MSEs are most important players in the economy of every developed and developing country and are popular for employment, private sector development, alleviating poverty and sustaining development. (Gebrehiwot, 2006)

In 2011 a defining standard is released in Ethiopia to categorize enterprises either as micro or small depending on human and capital capacities being the total asset used a primary Yardstick. (FDRE, 2011) The following Table shows the standard definition for SMEs in Ethiopia context

Type of Enterprise	Sector	Man power	Total Asset
Micro Enterprise	Industry	<5	<birr 100,000.00
	Service	<5	<birr 50,000.00
Small Enterprise	Industry	6 to 30	<birr 1.5 million
	Service	6 to 30	< birr 500,000.00

**Table 3: The classification of MSEs**

According to NBE report in 2019/20 the number of SMEs in Ethiopia is 111,547. These SMEs have created jobs or employment for 1,569,163 persons. The following table shows distribution of the SMEs by regions.

	Addis Ababa	Oromia	SNNPR	Amhar	Tigray	Dire dawa	Harari	Benisha	Somali	Gambel	Afar	Total
No of MSEs	13,608	30,897	6,967	37,234	18,541	374	304	636	2,246	448	220	111,54
No of total employment created	306,239	473,895	299,955	320,089	65,391	11,789	6,241	14,225	33,368	6,410	31561	1,569,163

Table 4: The distribution of MSEs and Employment they Create by region 2019/20

Ethiopia aims to achieve three main objectives through its MSE sector. The objectives are facilitating economic growth and equitable development, create long-term job opportunities and provide the basis for medium and large scale enterprises. (Abagissa, 2021)

## 2.6 SOCIAL MEDIA ADOPTION

Social media adoption is accepting the technology and using features of social media for business or corporate purposes. Like any technology, Social media technology acceptance is subject to challenges and opportunities. Many factors may affect social media acceptance. Pascucci, Ancillai & Cardinali in their systematic literature review study identified antecedents which affect social media adoptions as internal and external factors. Internal factors that affect social media adoption include personal characteristics, managers age, individual commitment, perception of social media(perceived usefulness, perceived ease of use and perceived utility).The External Factors affecting social media adoption included pressure from customers, competitors, availability of information about social media. (Pascucci F, 2018) Similarly, Siamagka and co found that social media adoption is significantly affected by organizational innovativeness and perceived usefulness. (Siamagka, 2015) .

## **2.7 MSE AND SOCIAL MEDIA ADOPTION**

Many studies have been carried out to understand the benefits of social media adoption and use in MSE context. (McCann M., 2015) has identified benefits of SM adoption and use among Scottish MSEs as improved communication with customers, increased brand awareness improved marketing of products and services, better ability to exhibit firm expertise, gaining more business contact, better market research, better customer feedback, reduced communication cost, increased sales, better customer service and increased customer satisfaction. (Irhass E. M., 2020) has also listed Increased productivity, systems integration, increased competitiveness, cost reduction and the provision of a collaborative environment as benefit for using SM in MSE context. What makes social media even a better suited for MSEs is its ease of use, low cost, technical manageability and its ability to connect with many potential consumers (Ali Qalati S, 2021). Advancement of the internet has brought Social media which has changed doing business rapidly. Adopting and using social media marketing by MSEs might create not only a lot of opportunities but also can change the shape and nature of its business all over the world.

## **2.8 MSE LEADERS AND SOCIAL MEDIA ADOPTION DECISION**

MSMEs are well known having limitation and acceptance barriers in Adopting a new technology (Mohd Irwan Dahnil, 2014). The barriers that prevent SME leaders from adopting social media to support their brands were lack of staff familiarity and technical skills. (Yogesh K. Dwivedi., 2021) MSE Leaders perceived the barriers of implementing IT in to their business operations as expensive investment and risky, involves complicated procedure, and needs technical expatriate and customer support. (Chong, 2012). In Gulf countries, according to (A, 2017), 90% of the owner leaders/managers are not using social media because either they were unsure of the benefits or lack technical skill to use SM as business platform. The other challenge to MSE leaders in adopting Social media is the perception that social media is free while it has considerable (Andersson, 2017) Factors affecting social media adoption to the MSE leaders in Ethiopian MSE context remains unclear like in developing countries (Ali Qalati S, 2021).

## **2.9 THEORETICAL FRAMEWORK**

The process of social media adoption can be best described using technology adoption theories. (Mohd Irwan Dahnil, 2014). Prior studies have used different theories to study IT related technologies. Olivera & Martin have identified five widely accepted technology adoption models. Namely, Technology adoption model(TAM), The theory of planned behavior (TPB), Diffusion of innovation (DOI), The Unified theory of Acceptance and technology use (UTATU) and The Technology, organization and Environment framework (TOE). Each model has its own unique focus and particular emphasis. For instance DOI emphasises the role of the characteristics of technology adoption; TAM & UTATU emphasizes behavior related characteristics; TBP, TAM & UTATU focus on Individual technology adoption; TOE framework focuses on organization led theoretical perspective. (Oliveira, 2011). Based on existing literatures most widely used and empirically tested theories in MSE context are TAM, DOI & TOE. (Rahbi, 2017) Each of these three theories will be discussed briefly here.

### **2.9.1 TECHNOLOGY ACCEPTANCE MODEL (TAM)**

TAM is a well-established and most commonly used model used to predict the behavioral intention to adopt technologies. TAM was introduced by Davis (1989). The model postulates that adoption of new technology primarily depends on two variables called Perceived ease of use (PEOU) and Perceived usefulness (PU) (Y, 2009). Given its simplicity TAM is the most widely used and it is also the most widely studied model. Therefore, it has been tried to enhance the model with addition of antecedent/constructs resulting in models which are considered derivatives of TAM like TAMII and UTAUT (Venkatesh, 2003)

PU- The degree to which a person believes that using a particular system would enhance his or her job performance

PEOU- The degree to which a person believes that using a particular system would be free of effort.

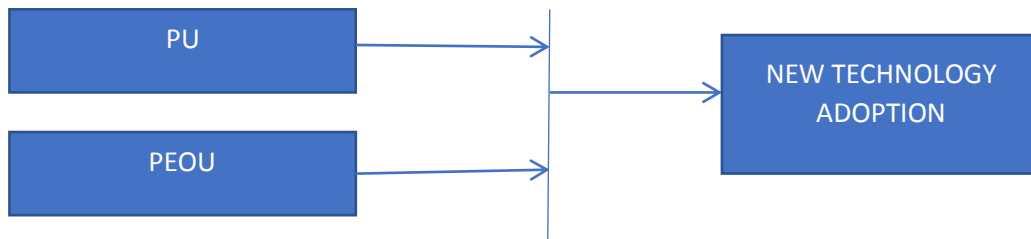


Figure 1: Technology Acceptance Model

### 2.9.2 DIFFUSION OF INNOVATION (DOI)

DOI model is also most widely used model for studying technology adoption in organizational context including MSEs. This model is introduced by Roger (1962). DOI is characterized by emphasis on internal and external characteristics of organization that impact the decision to adopt new technology in organizations. (Rahbi, 2017). Roger in his model, DoI, identified five perceived behaviors of innovation; namely relative advantage, compatibility, complexity, trialability, and observability. (Rahbi, 2017)

Relative advantage:- The degree to which an innovation is perceived as being better than the idea it supersedes

Complexity: The degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters.

Compatibility:- the degree to which an innovation is perceived as relatively difficult to understand and use

Trialability:- the degree to which an innovation may be experimented with on a limited basis

Observability:- the degree to which the results of an innovation are visible to others.

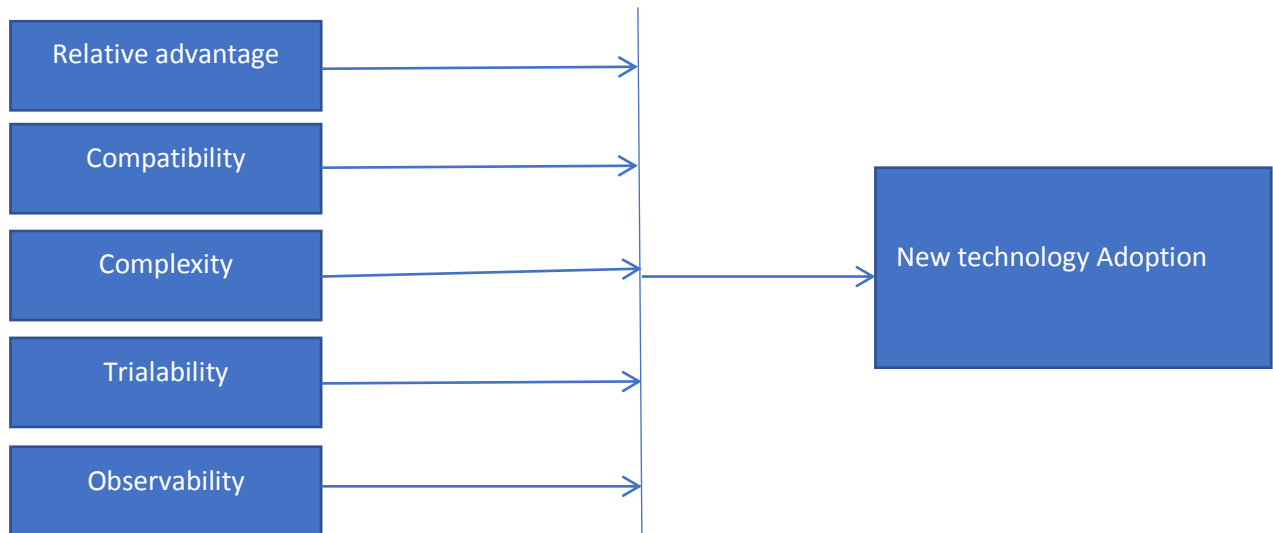


Figure 2: Diffusion of Innovation Model (DOI)

### **2.9.3 TECHNOLOGICAL, ORGANIZATIONAL AND ENVIRONMENTAL CONTEXT FRAMEWORK (TOE FRAMEWORK)**

TOE is a widely accepted model for studying technology acceptance in organizational contexts. It was first introduced by Tornatzky, Fleischer and Chakrabarti in 1990. TOE is popular for theoretically predicting and explaining adoption of technology from internal as well as external perspectives of organizations. The internal organizational perspectives are technological and organizational contexts where as external perspectives is identified as environmental context. (Rahbi, 2017). TOE framework is best referred to as organizational level theory. TOE gets its name from the three contexts the theory believed to influence adoption of technology: Technology (T); Organization(O); and Environment(E). (Baker, 2012). Each context has a set of determinants that are believed to impact the adoption of technology in organizations.

#### **2.9.3.1 TECHNOLOGY CONTEXT**

This context describes existing technologies in organization as well as the pool of technologies in the market. The determinants of this context identified by Roger and later adopted to DoI theory are the same. They are Relative advantage, complexity, compatibility, Trialability and Observability.

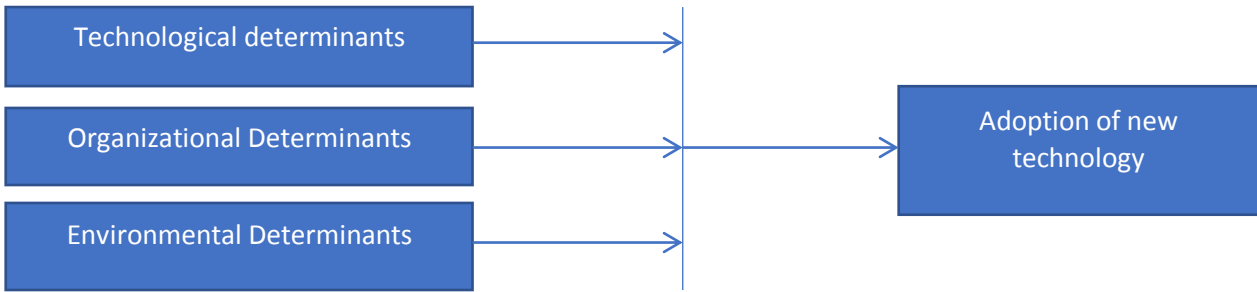


Figure 3: TOE Framework

### 2.9.3.2 ORGANIZATION CONTEXT

Organizational characteristics of businesses are the second set of determinants that affect adoption of new technology. Four organizational factors are widely mentioned in literature as determinants of the organizational context are enterprise size, top management support, CEO innovativeness and Experience and skill of employees or the firm. However, in MSE case Innovativeness and prior experience of employees as well as the enterprise are of interest.

#### CEO-Innovativeness

Here we deal with the level of receptiveness and openness of the owner-manager of the MSEs to new ideas and technology. Being open to new ideas and new products, is another factor affecting organizational adoption of innovations.

#### Skill, Knowledge and experience of Employees

This determinant has been found to have a positive and direct influence on the organizations decision to adopt new technology. What is addressed here is the accumulated knowledge, experience and familiarity with previous technologies. This will facilitate future adoption of technology.

### 2.9.3.3 ENVIRONMENT CONTEXT

These are factors believed to influence adoption of technology in the environment the organizations operate. It is believed that the arena in which an enterprise operates represents the primary stimulus for the adoption of innovations as organizations respond to changes in the

external environment. (Alshamalia, 2013) Determinants of this context include Competitive pressure, Customer pressure and social pressure but not the only.

Competitive pressure

Competitive pressure is a pressure due to competition between companies in the same industry. Usually competitive pressure a good incentive in adoption of technology.

Customer pressure

Customer impose pressures that impact the decision of enterprises to adopt new technologies. Especially MSEs are more vulnerable to customers' pressure.

Social pressure

This is a combined pressure from around your surrounding that may impact adoption of new technology. Regulation by Government and other socioeconomic pressures lies under this determinant.

## **2.10 RESEARCH GAP**

Very little is known about social media adoption of MSEs in Ethiopia. Understanding of factors that affect social media adoption will help MSEs know what it takes to adopt social media as a business platform.

## **2.11 CONCEPTUAL FRAMEWORK**

Theoretically, the TAM model is a behavioral prediction which lack consideration of other factors, the DoI model however is best for organizational setting but only considers technological dimensions. TOE is a model that considers the gaps with TAM and DoI models but lacks behavioral determinants considered in TAM model. Therefore, we adopt here TAM-TOE integrated model.

In this study TAM-TOE integrated model as used by (S., 2018) will be adopted but this time as applied to MSEs in Ethiopia. The TAM model identified PU and PEOU as primary determinants for technology adoption. The TOE model finds out three contexts influence technology adoption by organizations.

The researcher wanted to adopt the integrated model because most MSEs in the researchers pre research investigation have poor organizational setting therefore models not only for organizational setup but also for individual perception have to be considered to adopt the Social Media will influence the decision at organizational level. The target of Integrating two models is thus to find a more diversified list of factors influencing the decision of Adopting social media for business.

***Independent variables***

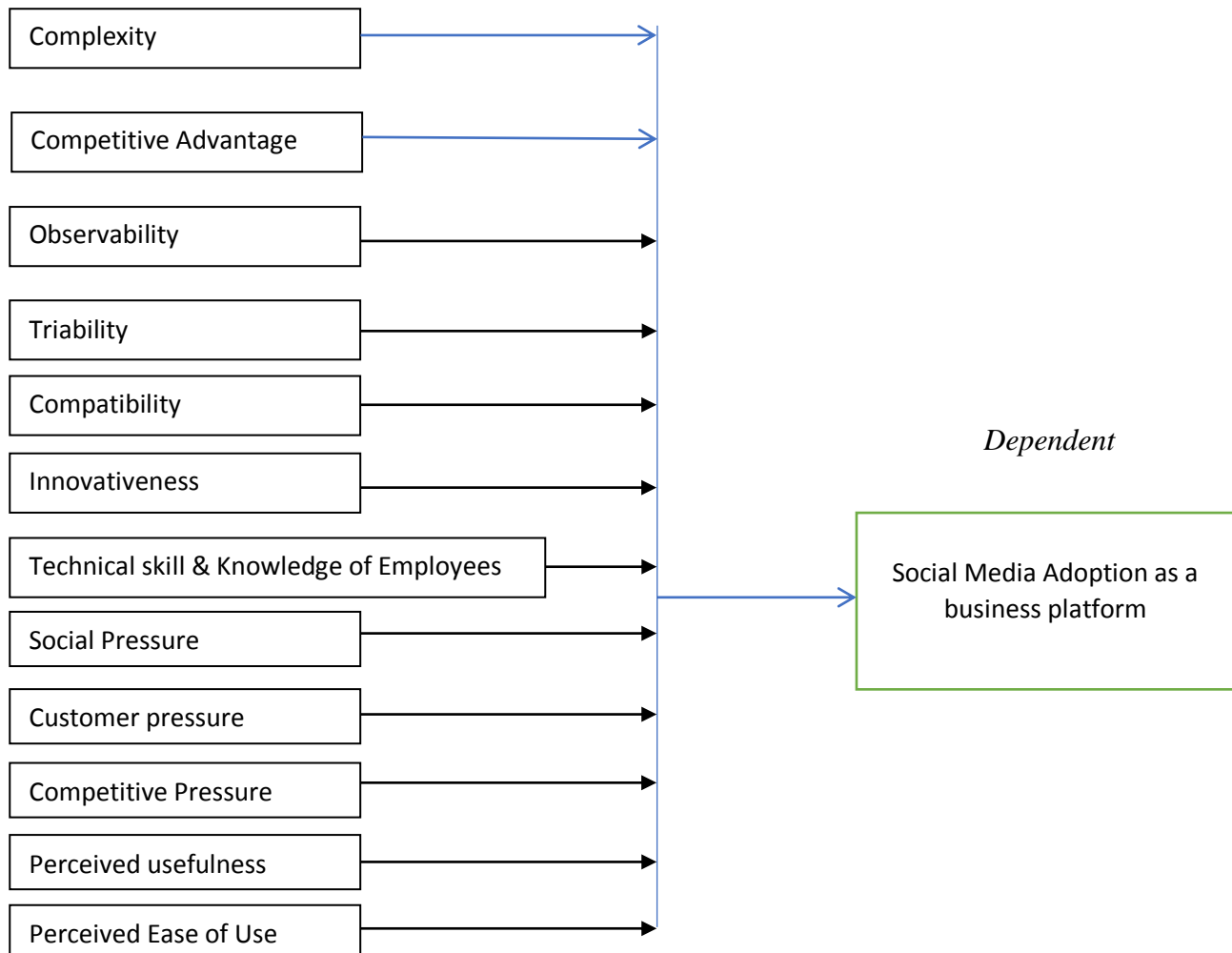


Figure 4: Conceptual model of study (TOE-TAM integrated model)

In this conceptual model variables like competitive advantage, complexity, compatibility, triability and observability are variables of technological context; variables like innovativeness & technical skill and knowledge of employees are organizational context variables; competitive pressure, customer pressure & social pressure are variables of environmental context. Perceived usefulness and perceived ease of use are behavioral variables said to influence social media adoption in prior studies. The independent variables of this model are compatibility, triability, observability, innovativeness, technical skill & knowledge of employees, competitive pressure, customer pressure, social pressure, PU and PEOU. Social media adoption as business platform is the dependent variable. Based on the conceptual model the following Hypothesis are developed in the case of MSEs in Ethiopia

1. Technological context influences Social media adoption decision
2. Organizational Context influences Social media adoption decision
3. PU influences Social media adoption decision
4. PEOU influences Social media adoption decision
5. Environmental context influences Social Media adoption decision

## **2.12 APPROPRIATE USE OF REFERENCES (DOCUMENTING CITATIONS)**

The research has acknowledge all the secondary sources including literature reviewed conceptual and theoretical and empirical research used as an input in conducting for their arguments in the literature review part and other parts of the paper both in the text and list of references (bibliography) section of the paper. The Harvard **citation** style will be adopted as this is citation style is being used for AAU School of Commerce.

## **CHAPTER 3**

### **RESEARCH METHODOLOGIES**

This chapter discusses the research Design employed in this thesis to investigate the factors that affect adoption of Social Media for Business by MSEs in Ethiopia. The research employed existing adoption models to know if they can be used identify the factors in Ethiopian context.

The chapter is aims to provide insights into the range of research paradigms where values and beliefs and the assumptions about the nature and conduct of the research are discussed continues with discussion of the research approach

#### **3.1 RESEARCH PARADIGM**

To define the boundaries of a research paradigm one has to answer three questions; namely, Ontological question, epistemological question and methodological question. Concerning ICT adoption decision there are three major research paradigms called positivism, post positivism and interpretism. The Ontological stance of this research is realism and it's believed that social reality is tangible. The epistimological stance of this research is that the investigator and the investigated are mutually independent. The research is predominantly quantitative and empirical testing is conducted in order to establish the truth of the propositions . Therefore, according to Lincon and Guba our research paradigm can be referred to as positivism. (Lincoln, 1985)

#### **3.2 RESEARCH APPROACH**

In this research Quantitative research approach is employed. Quantitative research deals with numbers, logic and objective stances. Because data in such approach uses structured instrument and responses are interpreted from numerical data they can converge to a given reality. Statistical analysis work well with quantitative data therefore the chances of extrapolating, replication are high and are repeatable. Therefore they are more reliable. This quantitative research is both descriptive and correlational. Existing models and standard Instruments for measuring our variables are employed which have been studied quantitatively so far. Therefore, adopting Quantitative approach is the most appropriate decision

### **3.3 RESEARCH DESIGN**

Having decided the research philosophy and research approach, the next phase is the research design. In this phase the data collection methods and the measuring Instrument, the sample and sampling technique used the data analysis and interpretation techniques used are briefly forwarded.

#### **3.3.1 SAMPLING DESIGN AND POPULATION SIZE**

Population of this study according to the federal agency for Micro and Small business is more than 110,000. But this figure only addresses the number of businesses formed and supported under the structure of the agency. But there are individual practitioners or businesses which are classed according to the classification criteria by the same agency. On the other hand the number of Micro and small business in the country hit more than 2 million according to the EDI established under Federal Ministry of Labor and Skill Development. Therefore, It is more convincing to identify the population as unknown. The sample size will be decided based on Cochran's formula. And a sample size of 384 has been the sample size of the study.

The study area included selected Towns and Cities in Ethiopia. The selected locations are Jimma, Jinka, Arbaminch, Wolaita sodo, Debrezeit, Bahirdar, Hawassa and Addis Ababa. The selection of the towns is based on convenience. Convenience in terms of ability to find volunteers who can help in distributing Printed surveys and collect social media contacts for online survey. Even though the selection of locations is based on convenience the sampling done in the towns is random Sampling.

The data collection work can be achieved using standard surveys used in previous studies for technology adoption researches. However, given the lack of prior studies about social media adoption by MSEs in Ethiopia, this study is made to include some general social media questions that can be used to help readers of this paper get insight about social media usage by MSEs in Ethiopia.

### **3.3.2 SOURCES OF DATA**

It is decided that the research strategy is surveying using online and paper based surveys as a data collection technique. Therefore the data source is purely primary and do not involve secondary data.

#### **3.3.2.1 SURVEY**

Most prior studies used survey for studying similar technology adoption researches (Irhaz E. M., 2020); (Chong, 2012); (Alshamalia, 2013) (Mohd Irwan Dahnil, 2014). Survey is popular for

- Its regarded an efficient and effective way to assess management perception about organizational issues including adoption (Rogelberg, 2007)
- Survey results contribute to a greater confidence in the generalization of the results to the whole population being considered by the study (Barlett, 2001)
- Survey is the most popular research approach in the field of IT Innovation Adoption (Mingers, 2003)
- Survey is time and cost efficient in comparison to other strategies like interview (Fowler Jr, 2013)

For data collection the survey is presented in two forms Online survey and printed paper survey. The rationale behind including manually administered printed paper surveys is to avoid possible inconveniences due to internet charges. For the online survey Google forms is used. Google Forms is selected as a tool for online surveys because its free, compatible with any device , can be shared to any platform and collects, analyze and summarizes data in real time.

### **3.3.3 DATA ANALYSIS**

The data analysis work ranges from instrument reliability and model validation to Descriptive statistics and logistic regression in an attempt to answer out research questions

#### **3.3.3.1 LOGISTIC REGRESSION**

Regression is the inferential statistics used. There are linear regression, multiple regressions and logistic regression. The choice of regression model depends on the type and complexity of data. Linear regression for example is applied for inferring relation between continuous independent

variables and one continuous dependent variable. Multiple regressions are used when the relation is being studied between independent variables and more than one dependent variable. Logistic regression is used to investigate relation between one non continuous dependent variable and independent variables. Since our Dependent variable Social Media Adoption (SMA) is dichotomous dependent variable with multiple independent variables; linear regression as well as multivariate regression cannot be applied. Logistic regression is the one in congruence and very commonly used in IT adoption literatures. (Rahbi, 2017) Logistic regression is suggested by many researchers as a powerful tool to model a non-linear relationship between one or more independent variables and one dichotomous dependent variable. (Chatterjee, 2015); (Hosmer Jr, 2013); (Sperandei, 2014); (Park, 2013)

In logistic regression also called Legit regression relationship among the set of variables is represented by

$$\text{Logit}(p) = b_0 + b_1 x_1 + b_2 x_2 + \dots + b_k x_k$$

Where

$p$  denotes probability of the SM adoption decision being positive

$b_0$  represents constant of intercept or constant of the dependent variable

$b_n$  coefficient of independent variables.

$k$  in  $b_k x_k$  represents the last independent variable

$k=6$  in our case

The output of LR is in the form of Odds of the specific outcome  $p$ . Odds therefore represent the probability of success divided by the probability of failure.

### **3.3.3.2 DESCRIPTIVE STATISTICS**

With the first section of the survey we have collected respondent demographic data, enterprise demographic data and general social media data about the enterprises. We used descriptive statistics on important concepts to interpret the data.

### 3.3.3.3 SCALE RELIABILITY AND VALIDITY

It is a common and recommended practice to adopt instruments from prior researches. (Blair, 2013) However many argued that the validity and reliability of research instruments are subject to changes depending on the context, culture, and other aspects. (Kimberlin, 2008); (Boynton, 2004). In this study this argument has motivated addressing issues of reliability and validity. Therefore, the adopted components of the instrument will be tested for validity and reliability and changes on the instrument will be made accordingly using exploratory factor analysis. Reliability is referred to the stability of findings where the survey is assumed to return similar results under different circumstances assuming other factors remain unchanged (Altheide, 1994).

Cronbach's  $\alpha$

Validity represents the truthfulness of findings or tests the extent to which the measure is actually measuring what is intended to be measured (Mohd Zulfadli Rozali, 2014) One of the most popular statistical tool used to measure reliability of research constructs is the cronbach's alpha. (Heale, 2015). Cronbach's alpha measured using coefficients which ranges between 0 and 1. The following table explains what the value of cronbach's alpha meant

Cronbach's alpha score	Reliability Interpretation
0.8-1.0	Excellent and effective with a high degree of consistency
0.7-0.8	Good and acceptable
0.6-0.7	Acceptable
0.5-0.6	Item needs to be revised
0-0.5	The item needs to be dropped.

Table 5: Interpretation of Cronbach's alpha (Bond, 2007)

KMO & Bartlett's test Of sphericity

The Kaiser-Meyer-Olkin (KMO) is a test conducted to examine the strength of the partial correlation (how factors explain each other) between the variables. KMO values closer to 1 are ideal whereas below 0.5 are unacceptable.

KMO Measure	Interpretation
$KMO \geq 0.9$	Marvelous
$0.8 \leq KMO < 0.9$	Meritorious
$0.7 \leq KMO < 0.8$	Average
$0.6 \leq KMO < 0.7$	Mediocre
$0.5 \leq KMO < 0.6$	Terrible
$KMO < 0.5$	Unacceptable

Bartlett's test Of Sphericity is used to test the null hypothesis that the correlation matrix is an identity matrix. An Identity correlation matrix means your variables are unrelated and not ideal for Factor analysis. A significant statistical test (usually less than 0.05) shows that the correlation matrix is not an identity matrix rejecting the null hypothesis

### **3.4 ETHICAL CONSIDERATION**

The required ethical considerations will be taken into account while undertaking this research so as to ensure that the entire research process and the results found are scientifically and morally acceptable. Therefore all the necessary precaution will be considered to ensure the required diverse ethical principles including principle of "do no harm" are respected and maintained at all stages of the research. As the research anticipated to involve undertake considerable review of theoretically and empirically compiled literatures, due acknowledgement all the literatures reviewed will be made. Besides the research also anticipate the gathering of requisite information from selected respondents by developing and administering of research tools such Questioners. The development of these research tools, the gathering of the requisite information and use of the obtained information will adhere to the accepted ethical principles and standards of a basic scientific research. Accordingly, in as much as possible the selection of respondents will be made in a transparent and unbiased manner. Besides selected respondents will be made aware of the objectives of the study and the type and end use of the information sought. The respondents will also be informed that the participation is purely voluntarily, and assured anonymity and the confidential and unbiased use of the information obtained. The respondents will be duly acknowledged for their voluntarily participations, time and positive contributions towards the achievements of the research objectives.

## **CHAPTER 4**

### **DATA ANALYSIS AND INTERPRETATION**

This chapter is composed of three main sections. The first section deals with study set-up which deals with the research instruments used and data collection methods employed. The second section deals with survey design and structure. The final section deals with data collection and Analysis.

#### **4.1 INSTRUMENT DESIGN AND STRUCTURE**

The instrument used here for data collection is survey. In this section design and structure of the survey instrument will be discussed.

##### **4.1.1 INSTRUMENT DESIGN**

Even though there doesn't exist rule of thumb to develop an ideal survey recommended best practices have been followed in designing and structuring our instrument. One of such practices is components of the survey are composed of previous works and proved to work in related contexts. (Hewson, 2012). The constructs and the associated component used in this study are compiled from prior scientific publications (Tripopsakul, 2018); (Chong, 2012); (Rahbi, 2017); (Moore, 1991); (Venkatesh, 2003); (Davis, 1989). The survey in this study follows the recommended practice of structuring so as to answer the research objectives and questions. The questions in the questionnaire are made to follow general guidelines of question formulation (Sue, 2012) . There are two types of questions in this survey close ended and open ended. We have only one open ended questionnaire however. The aim of this open ended question is to get hints about possible new factors not covered in the main body of the survey and recommend it for further works. Otherwise all other questions are close ended. Why we have chosen to use close ended Questions was because open ended questions are very difficult to analyze and interpret. (Patel, 2016) Open ended questions are also laborious to respondents and they are less likely to finish. (Galesic, 2009). The closed ended questions have included the four types category, list, scale, dichotomous. Presentation of the questions on the survey also followed best practices and are sequenced from more simple and general questions to focused ones. The questions used both English and Amharic to make it appropriately understandable to the

respondents. This approach to the sequence and language increases interest of the respondents (Rahbi, 2017)

#### 4.1.2 INSTRUMENT STRUCTURE

The Instrument is structured in a manner to cover key areas of social media adoption depending on the TOE-TAM integrated model. In addition to the main objective of the research the research has included social media related questions which will help in understanding social media interactions of the MSEs and perception of social media use among the MSEs. Therefore, the survey is structured in two sections where the first section is used to collect respondents' demographic information, Enterprise characteristics and social media related general questions. In the social media general question sub-section there exists an item which is designed to represent social media adoption which is the dependent variable in the research. This is a dichotomous item and assumes 0- for not adopt and 1- for adopt. (Premkumar, 1999).

Section	Sub sections(categories)	Number of Items
I	Respondent Demographic Information	3
	Enterprise characteristics	3
	Social media related general Information	6
II	Technological characteristics	19
	Organizational characteristics	6
	Environmental characteristics	12
	PEOU	3
	PU	5
Total		57

Table 6: Instrument Structure

In section two there are generally four subsections. The items in this section are close ended and measured using a five point Likert Scale which is widely accepted rating scale for measuring degree of agreement or disagreement the given statement or statements. (Croasmun, 2011). The response to each item is assigned a numerical value ranging from 1- for strongly disagree to 5-for strongly agree. The first subsection deals with technological factors that affect social media adoption. There are about 19 items representing five constructs. The second sub section have six

question and deals with organizational factors This subsection has two constructs. The third subsection deals with environmental characteristics that affect social media adoption. This subsection has 12 items representing three constructs. The final section deals with TAM characteristics and is represented by two constructs and eight items.

#### **4.2 PILOT TEST**

Carrying out pilot tests are believed to increase the quality of our surveys by identifying potential issues (Van Teijlingen, 2001), Helps refining it based on responses, minimize language and measurement errors and useful to test reliability of the test instrument. (Merolli, 2014)

A set of volunteers were asked to fill the survey 11 of them on paper printed survey and 2 on online platform. Their overall comment were collected basically ambiguous translation to Amharic language, type errors were among the main problems collected and necessary corrections were made real time. A reliability test was carried out and cronbach's Alpha was computed for the general data collected from the pilot project. Computation for Cronbach's alpha has returned above 0.9.

#### **4.3 INSTRUMENT DISTRIBUTION**

Survey was distributed using online media as well as printed paper form. Both printed as well as online survey was distributed using personal network of volunteers who are friends, friends of friends and relatives. The online form is made to be shared using social media platforms purposively to micro and small business enterprises known by the distributor. And the amount of prospective respondents to whom survey is shared remained unknown. 380 copies of surveys were printed and distributed to different towns namely, Jimma(50), Wolaita Sodo(50), Addis Ababa(120), Bahirdar(30), Arbaminch,(100), Jinka (30).

Out of the the unknown number of invitation to fill the survey online only 44 usable responses were collected online using Google forms and a total of 78 responses from Jimma(4), Wolaita Sodo(12), Addis Ababa(18), Bahirdar(5), Arbaminch,(33) and Jinka (6) were collected in Hard copy. The sum of online and printed paper survey responses sum up to be 122 responses were found. And based on this data is the analysis made in the following sections.

## 4.4 DATA ANALYSIS

The first task in the data analysis was test for reliability the second was test for validity where depending on the results of the coefficients for KMO and BTS Factor Analysis will be carried out. Then test for model has been carried out and the final Data analysis task of regression and descriptive statistics has been carried out.

### 4.4.1 Test for Reliability

Based on the analysis all constructs can be kept and acceptable. The following table shows the cronbach's alpha values computed for all constructs.

No	Questions	Construct	Cronbach's alpha
1	Q1-Q4	Relative Advantage (RA)	0.86
2	Q5-Q8	Complexity (CX)	0.88
3	Q9-Q11	Compatibility (CM)	0.87
4	Q12-Q14	Trialability (TR)	0.85
5	Q15-Q19	Observability(OB)	0.94
6	Q20-Q22	CEO Innovativeness (CI)	0.66
7	Q23-Q25	Experience, skill and Knowledge of staff (EXP)	0.83
8	Q26-Q30	Competitive pressure (CP)	0.85
9	Q31-Q33	Customer pressure (CSP)	0.8
10	Q34-Q37	Social Pressure (SP)	0.92
11	Q38-Q40	Perceived ease of Use (PEOU)	0.86
12	Q41-Q45	Perceived Usefulness	0.91

Table 7: Reliability Analysis

### 4.4.2 Test for Validity

Research Validity differs in qualitative and quantitative researches. In qualitative researches is the measure of the extent at which requirement of scientific methods are followed during the process of generating research findings to ensure trustworthiness, utility and dependability whereas in quantitative research it's the measure of the extent to which instrument measures

what it is intended to measure (Mohajan, 2017); (Zohrabi, 2013).the most common types of validity in relation to research instrument are content validity and construct validity. (Hartas, 2015) Content validity it left with the assumption that prior researches have done it well and construct validity analysis have been done in this research. The predefined constructs from the literature will be validated using exploratory factor analysis (FA). FA is considered an important statistical tool to develop, refine and evaluate the measurement instrument. (Matsunaga, 2015)

Our collected data set has been tested for factorability or correlation or suitability for FA using two indicators KMO index and BTS. The analysis for both indicators namely, KMO index and BTS yielded values that fall within the recommendation for FA. The results of the KMO index and BTS analysis are presented in the following table.

Context	Measure	
	Kaiser- Mayer-Olkin (KMO) measure of sample adequacy	Bartlett's Test of Sphericity (BTS)
Technology context (Q1-19)	0.89	1.74e-157
Organization Context(Q20-25)	0.87	4.5e-31
Environmental context(Q26-37)	0.82	1.49e-65
TAM (PEOU & pu) (Q38-45)	0.82	7.72e-71

*Table 8 KMOand BTS Values*

#### **4.4.3 FACTOR ANALYSIS (FA)**

There are different methods to carryout Factor analysis. Principal Component analysis, Generalized Least Square and alpha factoring are among the methods to be mentioned however the most commonly used and effective method is the PCA or principal component analysis. (Osborne, 2009) with PCA Varimax rotation is used for extraction. The aim of rotation is to simplify and clarify the data structure. The choice of the method of rotation is also popularity. Varimax rotation is a method of Orthogonal rotation to produce uncorrelated matrix and is by far the most common. (Osborne, 2009).

#### **4.4.3.1 EXPLAINED TOTAL VARIANCE**

Explained total variance is used to measure the discrepancy between a model and actual data. In other words, it is the part of the model's total variance that is explained by factors that are actually present and isn't due to error variance.

Eigenvalues represent the total amount of variance that can be explained by a given principal component. They can be positive or negative in theory, but in practice they explain variance which is always positive.

- If eigenvalues are greater than zero, then it's a good sign.
- Since variance cannot be negative, negative eigenvalues imply the model is ill-conditioned.
- Eigenvalues close to zero imply there is item multi-collinearity, since all the variance can be taken up by the first component.

The role of Eigen value in Factor analysis is to indicate the number of Factors that can well explain the data set items. Usually the number of significant factors are equal to Eigen value  $\geq 1$ . Usually the factors should explain more than 60% of the cumulative variance.

In selecting significant number of factors Scree plot is also used. Usually the Eigen values before bending point before the curve flattens are taken as the number of factors that represent the dataset

Explained total variance			
Component	Total	% of variance	Accumulated %
1	17.78	39.5	39.5
2	3.22	7.16	46.67
3	2.62	5.83	52.5
4	2.15	4.77	57.27
5	2	4.45	61.71
6	1.74	3.86	65.58
7	1.44	3.19	68.77
8	1.3	2.89	71.65
9	1.17	2.6	74.25
10	1.08	2.41	76.66
11	1.02	2.27	78.93
12	0.87	1.94	80.87
13	0.79	1.76	82.63
14	0.7	1.56	84.18
15	0.63	1.4	85.58
16	0.58	1.29	86.87
17	0.53	1.18	88.05
18	0.48	1.07	89.12

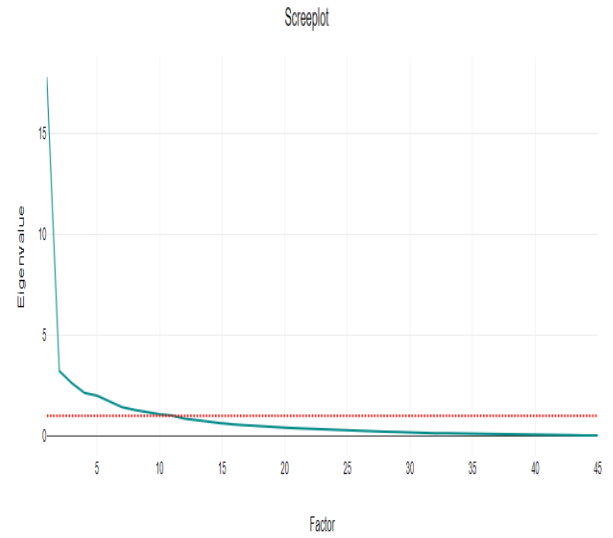


Figure 5: Scree Plot Example

Table 9 : Explained total Variance Example

For example The Explained Total Variance shown above number of factors that define this data are 11 with cumulative variance of more than 78%. The screw plot shows the same.

#### 4.4.3.2 CONSIDERATIONS USED FOR FACTOR ANALYSIS

- Factor analysis was conducted for each Context four in our Integrated model.( Technology context, Organizational Context, Environmental context, Psychological context (TAM context)) separately to warrant stability of factor loadings (Thi, 2006)
- Factor Loading of 0.5 is the suggested cutoff value for the construct to meet validation conditions (Hair J. B., 2006)
- No cross loading should be greater than 0.32 between items belonging to different constructs as far as the factor has enough items to represent at least three (Hair J. B., 2006). A loading difference of 0.2 may be tolerated with factors that are not well represented in the reduced structure.
- Eigen value of 1 is the cutoff point for factor extraction. (Molla, 2005)
- A factor with fewer than three items is weak and unstable (Osborne, 2009)

A strong data in Factor analysis means uniformly high communalities. High communality means communality value equal to or greater than 0.8. Items with low communality less than 0.4 should be dropped. Low communality may result in unstable data structure and the researcher may decide to drop (Osborne, 2009)

Using the Explained total variance matrix, the organizational context, the environmental context and the TAM context the Eigen value recommended factors and the predicted factors are equal therefore the number of factors whose Eigen value are one and greater than one are used for Varimax rotation. But the predicted and the Eigen Value factors from the Explained total Variance table are different predicted factors are five and scree plot factors are 4. Therefore rotation is made for factors 3,4,5 and 6 according to the recommendation by Anna B. Costello & Jason Osborne (Osborne, 2009). However, the rotation that provided good result was using 4 Factors. As a result the following factor loading structure was achieved.

	Context	Factors Extracted	Significant items Item loading >0.5	Items with cross loading	Trivial items Item loading <0.5
1	Technology	3	12	3	4
2	Organizational	2	4	2	0
3	Environmental	1	4	0	8
4	TAM	1	5	0	3

Table 10 : Factor analysis summary

The PCA carried out with Varimax rotation with scree plot results has returned seven factors with strong item loading structure and the above consideration to produce a stable data structure we have dropped one Factor because Item communalities are considered low, there didn't happen strong loading and the items are in conflict with the predicted data structure. And more factor is dropped because it has only one item. The table below provides the reduced Factor analysis

PCA Factors		Item Loadings	
Factor 1	Item 1	0.69	Technology Context
	Item 2	0.75	Relative Advantage(RA)
	Item 3	0.75	
	Item 4	0.77	(Q1-Q4)
Factor 2	Item 1	0.67	Technology context
	Item 2	0.79	New factor
	Item 3	0.59	(Q10,Q12,Q14)
Factor 3	Item1	0.9	Technology Context
	Item 2	0.89	Observability (OB)
	Item 3	0.88	
	Item 4	0.9	(Q15-Q19)

	Item 5	0.92	
Factor 4	Item 1	0.65	Organizational Context
	Item 2	0.73	New Factor
	Item 3	0.83	(Q22-24)
Factor 5	Item 1	0.88	Environmental Context
	Item 2	0.92	
	Item 3	0.91	Social Pressure (SP)
	Item 4	0.76	(Q34-Q37)
Factor 6	Item 1	0.88	
	Item 2	0.89	Perceived usefulness (PU)
	Item 3	0.86	
	Item 4	0.86	(Q41-Q45)
	Item 5	0.85	

Table 11: FA- Item Loadings

## 4.5 TEST FOR MODEL

### 4.5.1 MODIFIED TOE-TAM INTEGRATED MODEL

Modified TOE-TAM integrated model is a model modified in to a six factor model from the originally proposed 12 Factor model. This model is produced from the Instrument validation work done above. But Four of the Factors with their Exact items are found significant during our Factor Analysis. The factors and the items from the literature found to be significant with our data set are given in *table 12* below

But Factor analysis have shown three items one used to measure Compatibility(CM) and two used to measure Trialability in the originally proposed integrated model actually meant to measure one thing and assigned it to one factor. Similarly our Factor analysis have shown three items one used to measure CEO Innovativeness (CI) and two used to measure Experience and skill of employees in the org (EXE) in the originally proposed integrated model actually meant to

measure one thing and assigned it to another factor. These factors are perceived as new factors and researcher used his right of naming his new factors being in the same context of original model. *Table 13* has this result shown

Factor	Items	Context
Relative Advantage (RA)	Social media helps me to better communicate with my business stakeholders.	Technology
	Social media helps me to minimize business transaction costs	
	Social media enhances my business's image.	
	I would have no difficulty telling others about the results of using social media applications.	
Observability (OB)	The results of using social media applications are apparent to me	Technology
	Social media platforms provide features for interactive communication with customers	
	Social media platforms provide appropriate amount of interactive features (video, picture voice)	
	Social media platform provide features for vivid response	
Social Pressure (SP)	Social media is a popular application; therefore I would like to use it as a business platform, too.	Environment
	I follow others in a society for adopting social media.	
	I choose to adopt social media because many other businesses are already using it.	
	My friends and family members think we should adopt social media in my business	
Perceived Usefulness (PU)	Using social media allows me to manage my business operation in an efficient way.	TAM
	Using social media allows me to increase business productivity	
	Using social media allows me to accomplish my business tasks more quickly	
	The use of social media improves the quality of my business operation.	
	Using social media advances my competitiveness.	

Table 12 : Original model Factors adopted to new Model

New Factor	Items	Context	Derived from
Organizational Capability (OC)	Owner/manager has allocated adequate resources to adoption of social media	Organization	CI & EXE
	I have extensive technical knowledge about technologies similar to social media		
	Social media is a familiar type of technology to use		
Adoptability (AD)	Using social media is compatible with my business processes and operations	Technology	CM & TR
	I was able to properly try it out before I used social media applications		
	I have a great deal of opportunity to try various social media capabilities		

Table 13: New Factor assignments

#### 4.5.1.1 GOODNESS-OF-FIT OF MODEL

Logistic regression should be applied using a robust and adequate model to produce good outcomes. A robust and adequate Model needs to satisfy

- Higher predictive accuracy (Pearce, 2000)
- Statistically significant Goodness-of-fit for the model (Sloane, 1996)

Higher productive accuracy measures the prediction power of the model. This is measured by percentage correct from the classification table both baseline and full model. In this research the Classification table returned predictive accuracy of 100% for the full model and 90.26% of baseline model. Both have scored higher value and model can be said to have higher predictive accuracy.

		Predicted		Correct
		0	1	
Observed		0	1	
Do your enterprise use social media (facebook, telegram, youtube, twitter etc)?	0	0	11	0%
	1	0	102	100%
Total			90.26%	

Table 14 : Predictive accuracy (base line)

Observed		Predicted		Correct
		0	1	
Do your enterprise use social media (facebook, telegram, youtube, twitter etc)?	0	11	0	100%
	1	0	102	100%
	Total			100%

Table 15: predictive accuracy (Full)

Goodness-of-fit measures the appropriateness of the model that fits the sample data as a whole (King, 2008) . Many statistical analysis software have statistical tests like Chi2 test, Likelihood Ratio test for measuring better fit of a model. The Chi2 test in this research is used to infer fit of the model. When the p value in this test is  $< 0.001$  then the model is considered fit because p value is less than the critical value  $\alpha=0.05$  (Rahbi, 2017)

Our result for Chi2 test is the following

Chi2	df	p
72.14	24	$<.001$

Table 16: Chi\_ Squared Test

The p-value here shows acceptable result. Therefore with acceptable test of prediction power and Goodness-of-fit our model can be accepted appropriately robust for LR analysis.

## 4.5.2 TEST FOR COMPONENT MODELS

### 4.5.2.1 TOE FRAMEWORK

This model, a model popular for explaining Technology acceptance decisions is also found valid for using in our research context. Regression analysis of this model using our dataset in the following section is carried out and results are presented.

Chi-Squared Test			Classification table			
Chi2	df	p	Predicted			
46.38	19	<.001	0	1	Correct	
Observed	0	8	3		72.73%	
	1	1	102		99.03%	
	Total				96.49%	

Table 17: CH-squared & Classification table - TOE

### 4.5.2.2 TAM

TAM is a very popular model with two Psychological characteristics believed to affect technology adoption decisions. However as evidenced in the Chi-squared test below the p-value has a value greater than 0.05. This value indicated that using this Model the null hypothesis as well as the alternative hypothesis cannot be proved. Therefore the social Media Adoption decision of MSEs in Ethiopia cannot be modeled using TAM model.

Chi-Squared Test			Classification table				
Chi2	df	p			Predicted		
5.76	5	0.331			0	1	
						Correct	
			Observed	0	0	12	0%
				1	0	107	100%
				Total			89.92%

Table 18: Chi-squared and classification table-TAM

#### 4.6 LOGISTIC REGRESSION ANALYSIS

Multiple Logistic regressions is used in this research where the SPSS analyzed the data by binning the data to use Binary LR model. Binning is the concept used to transform research responses the Likert data in to Binary.

The aim of the regression is to find out the relation between instrument variables and the decision of Social Media Acceptance (SMA)

##### 4.6.1 MODIFIED TOE-TAM INTEGRATED MODEL

Regression result of this model shows that the P value of the research for all items implying all the six factors Justifies the null hypothesis.

The following table shows the regression of the model with our dataset.

	Coefficient B	Standard error	z	p	Odds Ratio	95% conf. interval
SMA	45.82	21755.97	0	0.998	7.91293E+19	0 - Infinity
Q1	0	15444.43	0	1	1	0 - Infinity
Q2	0	10425.9	0	1	1	0 - Infinity
Q3	0	17708.12	0	1	1	0 - Infinity
Q10	0	9599.24	0	1	1	0 - Infinity
Q12	0	13211.94	0	1	1	0 - Infinity
Q14	0	13864.85	0	1	1	0 - Infinity
Q15	0	16325.79	0	1	1	0 - Infinity
Q16	0	16280.05	0	1	1	0 - Infinity
Q17	0	13684.79	0	1	1	0 - Infinity
Q18	0	15333.53	0	1	1	0 - Infinity
Q19	0	16044.79	0	1	1	0 - Infinity
Q22	0	11272.65	0	1	1	0 - Infinity
Q23	0	15575	0	1	1	0 - Infinity
Q24	0	16543.17	0	1	1	0 - Infinity
Q34	0	22505.51	0	1	1	0 - Infinity
Q35	0	21543.3	0	1	1	0 - Infinity
Q36	0	18885.58	0	1	1	0 - Infinity
Q37	0	14650.84	0	1	1	0 - Infinity
Q41	0	16332.21	0	1	1	0 - Infinity
Q42	0	16188.49	0	1	1	0 - Infinity
Q43	0	13497.87	0	1	1	0 - Infinity
Q44	0	14367.65	0	1	1	0 - Infinity
Q45	0	15341.83	0	1	1	0 - Infinity
Constant	-21.96	34203.36	0	0.999		

Table 19: Regression of TOE-TAM integrated Model (modified)

#### 4.6.2 MODIFIED TOE MODEL

This model is accidental finding of our regression. In the literature as described above TOE is a model that works better with organizational settings. As discussed earlier the researcher wanted to integrate it with a psychological model because most MSEs in the researchers mind prohibit

were poor organizational setting and factors that affect individual decision to adopt the Social Media will influence the decision at organizational level.

The fact that the integrated model which is proved to be a valid model for our data set has forwarded no item to disprove the Null-hypothesis. The TAM and the TOE portions of the Modified integrated model were decided to be tested for validity separately. The TAM failed to work as a separate model but TOE has stood to be a valid model as discussed above.

A regression analysis with the same data set has been run using the TOE model. The result of the regression model is below

Model	Coefficient B	Standard error	z	p	Odds Ratio	95% conf. interval
Q1	-4.92	2.42	2.03	0.042	0.01	0 - 0.85
Q2	2.5	1.19	2.11	0.035	12.2	1.19 - 124.71
Q3	0.45	2.17	0.21	0.837	1.56	0.02 - 109.9
Q4	-1.52	1.24	1.23	0.219	0.22	0.02 - 2.47
Q10	-0.89	0.74	1.2	0.23	0.41	0.1 - 1.75
Q12	0.5	1.3	0.39	0.698	1.65	0.13 - 20.95
Q14	2.45	1.6	1.53	0.127	11.55	0.5 - 267.03
Q15	-5.68	2.92	1.95	0.051	0	0 - 1.03
Q16	-0.44	2.26	0.2	0.845	0.64	0.01 - 53.53
Q17	-0.45	1.58	0.28	0.778	0.64	0.03 - 14.1
Q18	1.76	1.83	0.97	0.334	5.84	0.16 - 209.61
Q19	4.9	2.68	1.83	0.068	134.71	0.7 - 25832.3
Q22	0.01	1.18	0.01	0.996	1.01	0.1 - 10.18
Q23	-4.96	2.75	1.81	0.071	0.01	0 - 1.52
Q24	4.14	2.67	1.55	0.121	62.86	0.33 - 11814.67
Q34	2.73	1.79	1.52	0.128	15.27	0.46 - 511.58
Q35	4.4	2.63	1.67	0.094	81.57	0.47 - 14144.25
Q36	0.64	1.19	0.54	0.591	1.9	0.18 - 19.78
Q37	-3.15	1.94	1.63	0.104	0.04	0 - 1.91
Constant	-6.05	4.1	1.48	0.14		

Table 20: Regression of TOE model (modified)

In this regression the result shows that four items have actually disproved the null Hypothesis and confirmed our alternate hypothesis.

## 4.7 DESCRIPTIVE STATISTICS

### 4.7.1.1 RESPONDENT DEMOGRAPHIC DATA

Among the respondents of the survey 53.5% were male and 46.5% were Females. 61.4% of Owner/managers of these enterprises are found to be in the age range of 25-34 Years. The category that has the least number if respondents is 55-64. While age category of 35-44 hosts the second largest share of about 29.6%

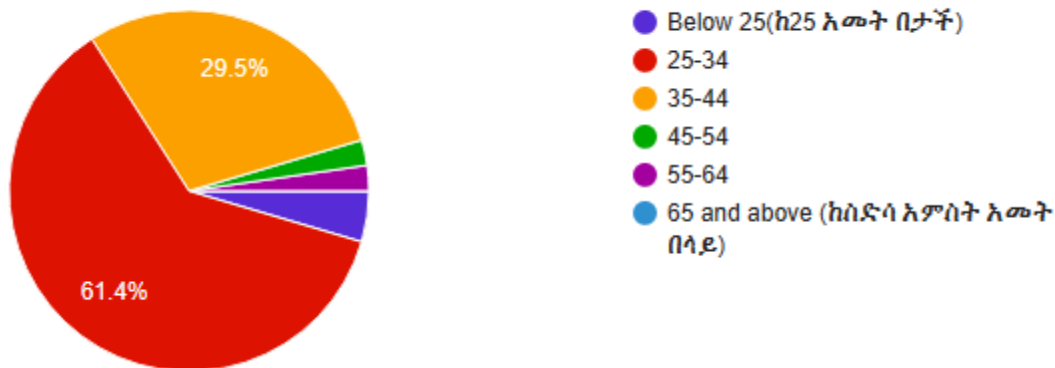


Figure 6 Age Group distribution

43.2% of the respondents and SME owners have bachelor degree, 25% of the SME owners have postgraduate degrees , 22.7 have education level of college diploma and 9.1% have secondary education.

### 4.7.1.2 ENTERPRISE DEMOGRAPHIC DATA

The enterprises less than 5 employees which can be considered as micro enterprises according to Federal Micro and Small Enterprises Development Agency constituted 64% of our respondents. The remaining can be grouped as small enterprises 33% of the total respondents. The following chart shows the distribution of the age of the enterprises



Figure 7: Organization Age group distribution

#### 4.7.1.3 GENERAL SOCIAL MEDIA DATA

The Industry of the enterprises participated in this survey is also summarized as manufacturing sector contains 18.2%, retail and wholesale sector has the highest number of players constituting 36.4% , professional and technical service 15.9 % , Food and beverage has also a significant share of 15.9 and construction, agriculture and others cover the rest. Of the respondents 81.8% of the enterprises use social media.

Among the social media platforms Telegram is the most popular with 80.6% of social media adopter enterprises using it for business purposes. Face book is the second mostly used platform and constitutes 52% of the respondents use it for business tiktok being the third popular platform for business Instagram stood fourth with 22.2% of the respondents using it. The others youtube, google plus & twiter have a very small share.

Enterprises use social media for different purposes. The following chart shows the usage distribution among the respondents. However, 76.3 % of the respondents use social media to advertise their products and services. 2.6% of respondents responded that they don't know why they have adopted social media.

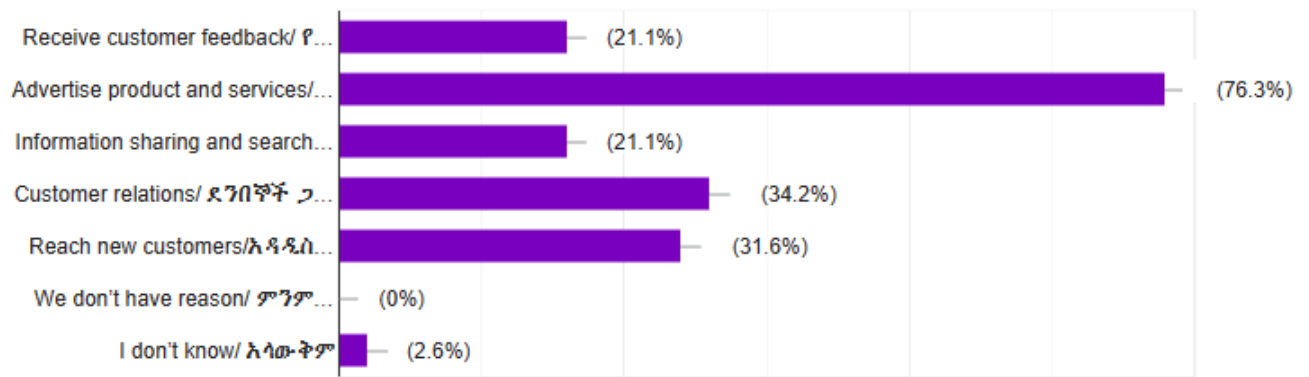


Figure 8: social media use statistics

## CHAPTER 5

### SUMMARY, CONCLUSION AND RECOMMENDATION

The purpose of this chapter is to present the overall summary of research effort. First, the research findings in relation to the research Questions will be discussed. Next the theoretical Implication of the research results will be discussed. Then Significance of research results as a Business decision, and to stake holders will be discussed. Finally recommendations for future studies will be presented

#### 5.1 DISCUSSION OF FINDINGS

##### **Which factors affect social media adoption decision by MSE leaders in our context?**

The TOE-TAM integrated model proposed in this research has been validated and a model with six factors is which fits our data and keeps the model original model structure. Using this model Factors in the TOE framework as well as the TAM framework have proved the null hypothesis. However, we have tried to remodel and the original integrated model to the Integrating models i.e TOE and TAM. Both are validated and the TAM framework failed to fit for our data. However TOE framework has been validated to fit in to our data. Regression Analysis has been done using this Model TOE and the result has shown some factors to Affect Social media adoption. Social Media Adoption decision by MSEs in Ethiopia is found to be affected by the following factors using the TOE framework.

- ♣ A technology context factor Relative Advantage (RA) Affects social media adoption decision. The statement taken to represent this factor that supported the alternative Hypothesis is ‘Q1- Social media helps me to better communicate with my business stakeholders.’ Therefore the opportunity the technology has brought ease to the way we communicate with our customers or the fact that Social media made it possible to communicate with customers affected the decision of the MSEs to Adopt Social media for Business.
- ♣ A technology context Factor Observability (OB) affects Social Media adoption decision. The statement in our instrument used to represent this factor that supports the alternative Hypothesis and reject the Null Hypothesis is ‘Q15 I would have no difficulty telling

others about the results of using social media applications.’ Therefore The feature of the technology being with observable results that can be understood and conveyed to others has affected social media adoption decision of the MSEs. Technology has observable, explainable and clear outcomes and this affects Social Media adoption Decissions.

- ♣ Organizational Context factor Organizational capability (OC) affects social media adoption decision. The statement taken to represent the factor that supported the alternative hypothesis and rejected the null hypothesis is ‘Q23 I have extensive technical knowledge about technologies similar to social media’. The exposure to social media related technologies and knowledge about related technology encouraged SMEs to Adopt social Media for Business.
- ♣ Environmental Factor Social Pressure (SP) affects Social media Adoption Decision by MSEs. The statement taken to represent the factor is ‘Q37 My friends and family members think we should adopt social media in my business’ Therefore pressure from Social circle affects adoption of Social media by MSEs.

### **Do existing models used in the literature to study technology adoption decision works for studying Social Media adoption in developing economy like Ethiopia**

TOE-TAM integrated model and TOE model which are validated for our data set are valid models to be used in our context. But TOE model has returned positive results and can be best recommended for used in our context

### **What are the main uses of social media among MSEs in Ethiopia?**

What is the level of social media adoption by MSEs in Ethiopia? Social media most popularly used for Advertising products and services by the MSEs. MSEs in Ethiopia use social media for Customer relation and reach new customers with consecutive popularity. Using Social media for receiving customer feedback and searching and sharing information is less popular among the MSEs.

The following are why MSEs use social media with decreasing popularity

- ♣ Advertise products and services
- ♣ Customer relations
- ♣ Reach new customers
- ♣ Receive customer feedback
- ♣ For searching and sharing information

### What is the level of social media adoption by MSEs in Ethiopia?

According to the survey most of the MSEs use social media for business purposes. Therefore more than 80% of MSEs use social media for Business. However level of Utilization differ as shown in the above question

### What social media sites are being used in Ethiopian MSEs?

Telegram is by far the most popular social networking site or platform in Use by MSEs in Ethiopia for Business. Facebook is the second popular social networking platform. Next to Facebook Tiktok and Instagram are used for Business by MSEs even though less popular.

## 4.8 THEORETICAL IMPLICATION

The fact that models and instruments need validation under different situation is because when the context of research is changed the models and instruments may not work or behave differently. The same fact is proved to be here. The Models and the instruments that have been used in prior researches have been validated and modified to fit the new context and situation.

- ♣ TOE\_TAM integrated model is modified as follows to fit the data set we have. After carrying out Factor analysis the originally proposed model need to undergo some changes to create the model below.

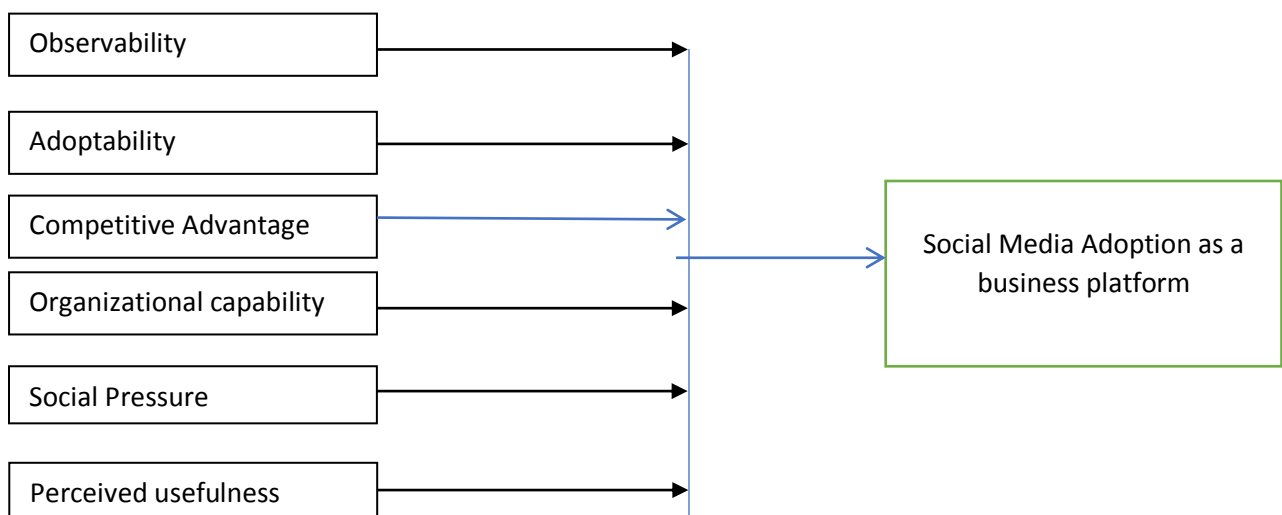


Figure 9: TOE\_TAM integrated model (modified)

However using this model we cannot reject the null hypothesis the model can be used to study social media adoption with different research setups.

Breaking down the integrated model in to component models the two namely, The TOE framework and The TAM models were studied. However the TAM model which has a valid component of perceived usability in the integrated model is proved to be unfitting model to the dataset. We cannot reinforce or reject the null Hypothesis as well as the Alternate hypothesis so it cannot be used as a separate model. TAM separately is an invalid Model to study social media Adoption decisions.

However the TOE model worked fine the model is validated to be Good fit with the data and the regression analysis also returned Factors that proves the alternate Hypothesis as discussed above in same chapter. Theoretically we can say TOE model alone with the validation changes can be used to study Social media Adoption decision in similar research contexts. The following TOE model can be used to study social media adoption decisions by MSEs in Ethiopia and developing economies of our status.

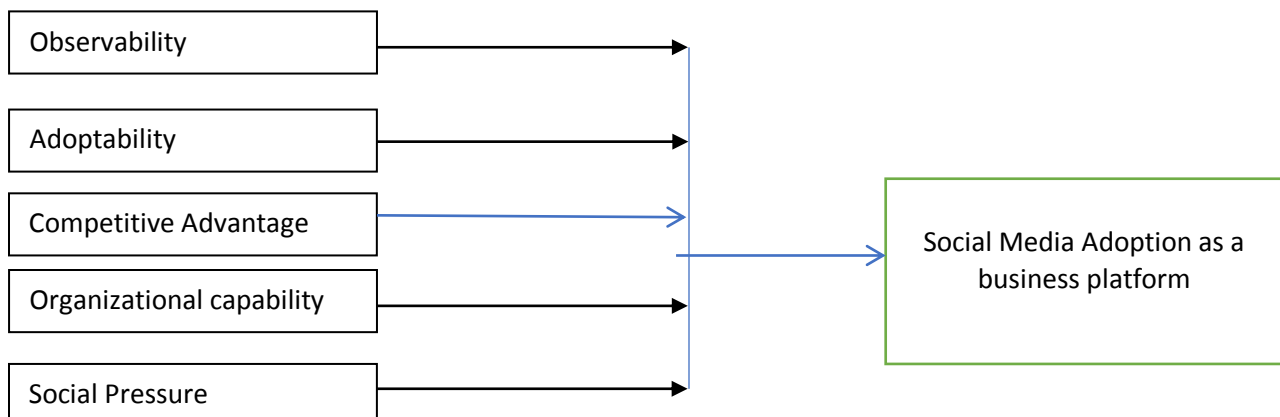


Figure 10 : TOE Framework (modified)

#### **4.9 RECOMMENDATION FOR FUTURE WORK**

As shown in the model validation and research result discussion the factors that affect social media decision are too small as compared to the literature. The Valid models of this research both the integrated and the TOE cannot come up with satisfactory list of factors affecting Social Media Adoption Decision. Therefore, developing new model with new factor dimensions may be necessary. This can be done by using a two phase iterative research where the first part is qualitative with the study to find out what affects the decision of the MSEs to Adopt social Media and using the result of the responses develop a Model and an instrument that can be confirmed through Quantitative research.

The reason why the integrated model and the TOE model which are proved valid models to describe the data returned different results remained question. It's believed that this have to be worked out with a wider sample and is left for future work.

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## Annex 1. MEASUREMENT AND INSTRUMENT

All measured items to be used in this study were adopted from previously validated scales with slight modification to fit the current study. Each item is measured on a five-point Likert scale ranging from 5(strongly agree) to 1(strongly disagree).

- 1- Strongly Disagree
- 2- Disagree
- 3- Neutral
- 4- Agree
- 5- Strongly agree

The following tables show the latent variables and the associated items with Literature sources.

Determinants and the associated items of the Technological context of TOE framework

Independent variable	items	Source
Relative Advantage (RA)	Social media helps me to better communicate with my business stakeholders.	(Tripopsakul, 2018);
	Social media helps me to minimize business transaction costs	(Chong, 2012);
	Social media enhances my business's image.	(Rahbi, 2017);
	Businesses which use social media applications have more prestige than those who do not	(Moore, 1991)

	It is easy to get social media to do what I want it to do.	(Venkatesh,
	It is easy to become skillful at using social media for business purposes.	2003); (Chong,
Complexity(	Social media platforms are easy to use.	2012);
CX)	Learning to use social media platforms is easy.	(Tripopsakul , 2018); (Moore, 1991)
	Using social media is compatible with existing IT infrastructure.	(Tripopsakul
	Using social media is compatible with my business processes and operations.	, 2018); (Rahbi,
Compatibility (CM)	It is easy to integrate social media with my existing business platform	2017); (Moore, 1991)
	I was able to properly try it out before I used social media applications	(Tripopsakul , 2018);
Trialability (TR)	The cost of trying social media for a business purpose is relatively low compared with other platforms.	(Rahbi, 2017);
	I have a great deal of opportunity to try various social media capabilities	(Moore, 1991)
Observability (OB)	I would have no difficulty telling others about the results of using social media applications.	(Moore, 1991);
	The results of using social media applications are apparent to me	(Moore,

Social media platforms provide features for interactive communication with customers (Moore, 1991);  
 Social media platforms provide appropriate amount of interactive features (video, picture voice) (1991)  
 Social media platform provide features for vivid response

Determinants and the associated items of the Organizational context of TOE framework

Independent variable	items	Source
Innovativeness (CI)	If I hear about new information technologies, I would look for ways to experiment with it.	(Tripopsakul, 2018);
	I am usually the first to try out new IT compared with my friends.	(Rahbi, 2017);
	Owner/manager has allocated adequate resources to adoption of social media	(Moore, 1991)
Skill, knowledge and Experience of Employees (EXP)	I have extensive technical knowledge about technologies similar to social media	(Venkatesh, 2003);
	Social media is a familiar type of technology to use	(Tripopsakul, 2018);
	I have the ability to quickly learn and apply new information technologies.	(Moore, 1991)

Determinants and the associated items of the Environmental context of TOE framework

Independent variable	items	Source
	I believe I will lose my customers to competitors if I do not adopt social media	(Oliveira, 2011);
	I feel it is a strategic necessity to use social media to compete in the marketplace.	(Alshamalia, 2013)
Competitive pressure (CP)	Social media would help my business to earn more competitive advantage	(Tripopsakul, 2018)
	Social media would help my business ability to outperform competition.	(Rahbi, 2017)
	Social media would help my business to generate higher profits	
	I know my customers are ready to do business transactions via social media applications.	(Tripopsakul, 2018)
Customer pressure(CSP)	My customers are demanding the use of social media in doing business transactions with them.	(Rahbi, 2017)
	It is easy for my customers to switch to other sellers for similar services/products that I provide.	
Social Pressure(SP)	Social media is a popular application; therefore I would like to use it as a business platform, too.	(Tripopsakul, 2018)
	I follow others in a society for adopting social media. My friends and family members think we should adopt social	(Rahbi, 2017)

media in my business

I choose to adopt social media because many other businesses are already using it.

Determinants and the associated items of the behavioral TAM theory.

Independent variable	items	Source
Perceived ease of use (PEOU)	The procedure of using social media is understandable.	(Davis, 1989)
	It is easy for us to learn using social media for business purposes	(Tripopsakul, 2018)
	It is easy to make use of using social media for business purposes.	
Perceived usefulness (PU)	Using social media allows me to manage my business operation in an efficient way.	(Davis, 1989) (Tripopsakul, 2018)
	Using social media allows me to increase business productivity	2018)
	Using social media allows me to accomplish my business tasks more quickly	
	The use of social media improves the quality of my business operation.	
	Using social media advances my competitiveness.	

**Survey for Social Media Adoption of SMEs**

Dear \_\_\_\_\_,

I am currently pursuing Masters of Arts in Business Leadership at Addis Ababa University. I am carrying out a thesis on factors affecting social media adoption by Ethiopian Micro and small business enterprises. It is believed that the study results will be valuable not only to the individual firms but also for public authorities and NGOs working on MSE sector. All information provided by individual respondents will be strictly confidential and will be purely used for academic purposes only

I would like to thank you in advance for kindly agreeing to participate in this survey.

If you have any question about this study or survey questionnaire please contact me using the information below

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**ድርጅቶች**

**የተከበሩ:-----**

እኔ በአዲስ አበባ ዩኒቨርሲቲ የንግድ ስራ አመራር ተማሪ ስሆን በአሁኑ ወቅት የመመረቂያ ጽሁፌን ጥናት በማካሄድ ላይ እገኛለሁ። የጥናት ጽሁፌም የሚያተኩረው ጥቃቅን ፣ አነስተኛ እና መካከለኛ የንግድ ተቋማት ማህበራዊ ሚዲያን ለንግድ እንቅስቃሴ ለመጠቀም የሚገጥማቸውን ተግዳሮቶች እና አበረታቻችን በመለየት ላይ ነው። የዚህ ጥናት ውጤትም ለጥቃቅን እና አነስተኛ የንግድ ማህበራት ብቻ ሳይሆን እነሱን ለሚደግፉ መንግስታዊ እና መንግስታዊ ላልሆኑ አካላት ይጠቅማል ብለን እናምናለን።

በዚህ ጥናት ላይ ለመሳተፍ ውድ ግዜዎን ሰውተው ለደረጉልን ድጋፍ ከወዲሁ ላቅ ያለ ምስጋና እናቀርባለን።

በዚህ ጥናት ውስጥ የሰጡዎቸው ማናቸውም መረጃዎች ሚስጢራዊነታቸው እንደተጠበቀ ለጥናታዊ ምርምር ስራው ብቻ የሚያገለግል መሆኑን እናረጋግጣለን።

ይህን ጥናት እና የዳሰሳ ጥያቄዎችን በተመለከተ ለሚኖራችሁ ማንኛውም ጥያቄ ቀጥሎ በተገለጸው ማንኛውም መንገድ ልታገኙኝ እንደምትችሉ በትህትና እጠይቃለሁ።

**ስም: ፋሲል አየለ**

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**ስልክ: 0911028057**

**ቴሌግራም- 0911028057**

## Survey for Social Media Adoption of SMEs

This survey have two parts where the first part is Demographic information where basic demographic questions about the business owner /manager and the business will be collected and the second part consists of the main body of the questionnaire.

ይህ ጥናት ሁለት ክፍሎች ያሉት ሲሆን የመጀመሪያው የመግቢያ አጠቃላይ ጥያቄዎች የያዘ እና መጠይቁን ስለሚሞላው ሰው እና ስለ ድርጅቱ አጠቃላይ ጥያቄዎችን የያዘ ሲሆን ሁለተኛው ዋናው የጥናቱ ክፍል የሆኑ ጥያቄዎችን የያዘ ነው።

**PART I/ ክፍል 1**

1. What is the gender of the enterprise owner/manager?

ይህን መጠይቅ ሚሞላው /የምትሞላው ባለቤት ወይም ማናጀር ጾታ ምንድን ነው

- Male/ ወንድ
- Female/ ሴት

2. Which Age group do you belong?

እድሜዎ በየትኛው ክልል ውስጥ ይመደባል?

- Below 25(ከ25 አመት በታች)
- 25-34
- 35-44
- 45-54
- 55-64
- 65 and above (ከስድሳ አምስት አመት በላይ)

3. What is the level of your education?

የትምህርት ደረጃዎ ከየትኛው ይመደባል?

- No formal education/ መደበኛ ትምህርት አልተማርኩም
- Primary education/አንደኛ ደረጃ ትምህርት
- Secondary education/ ሁለተኛ ደረጃ ትምህርት
- College diploma/ ዲፕሎማ
- Degree/ ዲግሪ
- Post graduate(MA, MSc/PhD)/ድህረ ምረቃ (ሁለተኛ ደግሪ ፣ዶክተሬት)
- Other; specify(ሌላ፣ ይግለጹ)\_\_\_\_\_

4. What is the age of your Enterprise?

የድርጅቱ እድሜ ምን ያህል ነው?

- Less than 1 year /ከአንድ አመት በታች
- 1-3 years/አመት
- 3-5 years/አመት
- More than 5 years/ ከአምስት አመት በላይ

5. What is the total number of employees in your enterprise?

የሰራተኞቻችሁ ብዛት ስንት ነው?

- Less than 5/ ከአምስት በታች
- 5-9 employees/ሰራተኞች
- 10-99 employees/ሰራተኞች
- More than 100 employees/ ከመቶ በላይ ሰራተኞች

6. Which of the following describes your principal sector or industry?

የድርጅቱ ዋና የሥራ መስክ ወይም ኢንዱስትሪ የቱ ነው?

- Manufacturing/የማምረት ስራ
- Wholesale and retail/ የጅምላ እና ችርቻሮ ንግድ
- Professional and technical service /የሙያ እና የቴክኒክ ስራ
- Construction/ የግንባታ ዘርፍ
- Food and beverage/ የምግብ እና መጠጥ
- Agriculture, cattle,chicken and fish/የግብርና ፣ ከብት እና ዶሮ ርባታ ፣ አሳ
- Other, specify/ሌላ፣ ይጥቀሱ\_\_\_\_\_

7. Do your enterprise use social media (facebook, telegram, youtube, twitter etc)?

ድርጅቱ የማህበራዊ ሚዲያ ተጠቃሚ ነው

- Yes/ አዎ በሚገባ
- No / አንጠቀምም

If your answer is no Jump to number 10 / መልሶ አንጠቀምም ከሆነ ጥያቄ ቁጥር 8 እና 9ኝን ይዘለሉ

8. Which social media do your enterprise use? (more than one choice is possible)

ድርጅትዎ የቱን ወይም የትኞቹን የማህበራዊ ሚዲያ ይጠቀማል (ከአንድ በላይ መምረጥ ይቻላል)

- Facebook/ ፌስቡክ
- Youtube/ ዩቲዩብ
- Twitter/ ተዊተር
- Telegram/ ቴሌግራም
- Google+/ ጉግል ፕላስ
- Instagram/ ኢንስታ ግራም
- Tiktok/ ቲክቶክ
- Other; please specify / ሌላ ጅምር \_\_\_\_\_

9. Why does your enterprise use social media?

ድርጅቶ የማህበራዊ ድህረ ገጹን ለምን አገልግሎት ይጠቀማል

- Receive customer feedback/ የደንበኞች አስተያየት ለመሰብሰብ
- Advertise product and services/ምርት እና አገልግሎቶችን ለማስተዋወቅ
- Information sharing and search/መረጃ ለመሰብሰብ
- Customer relations/ ደንበኞች ጋር ለመገናኘት
- Reach new customers/አዳዲስ ደንበኞች ለማግኘት
- We don't have reason/ ምንም ምክንያት የለንም
- I don't know/ አላውቅም

10. Does your enterprise intend to adopt social media?

ለድርጅትዎ ማህበራዊ ሚዲያን የመጠቀም ሃሳብ አለዎት

- Yes/ አዎ
- No/ አይ የለኝም

11. If your answer is ‘No’ to the above question please write down why you are not interested in using social media for business.

ከላይ ላለው ጥያቄ መልስዎ ‘አይ የለኝም’ ከሆነ ሰሻል ሚዲያ መጠቀም የማይፈልጉበትን ምክንያት ይግለጹ.

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**Part II/ ክፍል 2**

This part of the survey used standard questions which are used in prior works and used to study social media adoption. Respondents will select one value given 5 to one. The meaning of each scale is represented below

ይህ ክፍል ተመሳሳይ ጥናቶች ለማካሄድ ጥቅም ላይ የዋሉ እና መደበኛ የማህበራዊ ምዴያ ቅቡልነትን ለማጥናት የተሰናዳ ሲሆን ከ 5 እስከ 1 ያሉትን በመምረጥ ይከናወናል። ቁጥሮቹ የሚወክሉት

- |                      |                |
|----------------------|----------------|
| 5. Strongly Agree    | 5. በጣም እስማማለሁ  |
| 4. Agree             | 4. እስማማለሁ      |
| 3. Neutral           | 3. አስተያየት የለኝም |
| 2. Disagree          | 2. አልስማማም      |
| 1. Strongly Disagree | 1. በጣም አልስማማም  |

No	Item	5	4	3	2	1
1	Social media helps me to better communicate with my business stakeholders. ማህበራዊ ሚዲያ ከንግድ አጋሮቼ እና ደንበኞቼ ጋር የተሻለ ግንኙነት እንዲኖር ይረዳኛል					
2	Social media helps me to minimize business transaction costs ማህበራዊ ሚዲያ የንግድ እንቅስቃሴ ወጪዎችን እንድቀንስ ይረዳኛል					
3	Social media enhances my business's image. ማህበራዊ ሚዲያ ለንግድ ስራዬ የገጽታ ግንባታ አስተዋጽኦ ያደርጋል					
4	Businesses which use social media applications have more prestige than those who do not ማህበራዊ ሚዲያ የሚጠቀሙ ድርጅቶች ከማንጠቀሙ የተሻለ ገጽታ እና ግርማ አላቸው					
5	It is easy to get social media to do what I want it to do. ማህበራዊ ሚዲያን በመጠቀም የምፈልገው ነገር ማድረግ እንድንችል ማድረግ ቀላል ነው					
6	It is easy to become skillful at using social media for business					

purposes.

ማህበራዊ ሚዲያን ለንግድ አገልግሎት ለመጠቀም የሚያስፈልገውን ችሎታ በቀላሉ ማጎልበት ይቻላል

7 Social media platforms are easy to use.

የማህበራዊ ሚዲያ ለአጠቃቀም ቀላል ነው

8 Learning to use social media platforms is easy.

የማህበራዊ ሚዲያ አጠቃቀምን በቀላሉ መማር ይቻላል

9 Using social media is compatible with existing IT infrastructure.

ባሉን የ ኮምፒዩተር፣ስልክ እና የአይቲ እቃዎች እና አገልግሎትን በመገልገል ማህበራዊ ሚዲያን መጠቀም እንችላለን

10 Using social media is compatible with my business processes and operations.

የንግድ ስራ እንቅስቃሴዎችንን ማህበራዊ ሚዲያን በመጠቀም ያለ ችግር ማከናወን ይቻላል

11 It is easy to integrate social media with my existing business platform

የንግድ እንቅስቃሴዎችንን ከማህበራዊ ሚዲያ ጋር በቀላሉ ማቀናጀት ይቻላል

12 I was able to properly try it out before I used social media applications

ማህበራዊ ሚዲያን ለንግድ ስራችን ለመጠቀም ከመወሰናችን በፊት ሞክረን የማየት እድል አለን

13 The cost of trying social media for a business purpose is relatively low compared with other platforms.

ከሌሎች የንግድ ሲስተሞች (ለምሳሌ ማስታወቂያን በቲቪ ማሰራት) አንጻር ማህበራዊ ሚዲያን መጠቀም የተሻለ ወጪን ይቆጥባል።

14 I have a great deal of opportunity to try various social media capabilities

በማህበራዊ ሚዲያ ያሉ አቅጣቢዎች እና እድሎችን የመሞከር እድል አለኝ

15 I would have no difficulty telling others about the results of using social media applications.

ማህበራዊ ሚዲያን በመጠቀም የሚገኙ ውጤቶችን ለሌሎች በቀላሉ ማስረዳት

እችላለሁ

16 The results of using social media applications are apparent to me

ማህበራዊ ሚዲያን የመጠቀምን ቱሩፋቶች (ጥቅሞች) ተረድቻለሁ

17 Social media platforms provide features for interactive communication with customers

ማህበራዊ ሚዲያ ከደንበኞች ጋር የሁለት-ደብዳቤ ግንኙነት-ማድረግ የሚያስችሉ ናቸው

18 Social media platforms provide appropriate amount of interactive features (video, picture voice)

ማህበራዊ ሚዲያ የሁለት-ደብዳቤ ግንኙነቶችን ለማሳለጥ የድምጽ፣ የቪዲዮ እና የፎቶ መልእክቶችን ልንለዋወጥባቸው እንችላለን

19 Social media platform provide features for vivid response

ማህበራዊ ሚዲያ መሳጫ እና አስደሳች ስሜቶችን ይፈጥራል

20 If I hear about new information technologies, I would look for ways to experiment with it.

ስለ አዲስ ቴክኖሎጂ ከሰማሁ የተቻለኝን መንገድ ሁሉ ተጠቅሜ እሞክረዋለሁ

21 I am usually the first to try out new IT compared with my friends.

ብዙ ጊዜ አዲስ ቴክኖሎጂዎችን እንደ መጡ ለመሞከር ከዳደሮቼ ቀዳሚ ነኝ

22 As owner/manager I will allocate adequate resources for adoption of new Information Technology

እንደ ባለቤት/ ማናጀር አዲስ ቴክኖሎጂዎችን ለማምጣት እና ለማስጀመር የሚያስፈልገውን ሃብት እና ጥረት አወጣለሁ

23 I have extensive technical knowledge about technologies similar to social media

ከማህበራዊ ሚዲያ ጋር የሚቀራረቡ ወይም ተያያዥ ቴክኖሎጂዎችን በተመለከተ ሰፊ ቴክኒቻል እውቀት አለኝ

24 Social media is a familiar type of technology to use

ማህበራዊ ሚዲያ የተለመዱ የ አይቲ ቴክኖሎጂዎች አይነት አጠቃቀም አለው

25 I have the ability to quickly learn and apply new information technologies.

አዳዲስ የኢንፎርሜሽን ቴክኖሎጂዎችን በቀላሉ የመማር እና የመጠቀም ልምድ አለኝ

- 26 I believe I will lose my customers to competitors if I do not adopt social media  
ማህበራዊ ሚዲያውን ካልተቀላቅልን እና መጠቀም ካልጀመርን ደንበኞቻችንን ልናጣ እንችላለን
- 27 I feel it is a strategic necessity to use social media to compete in the marketplace.  
ማህበራዊ ሚዲያን መጠቀም ራስዎን ተልእኮ መስጠት የንግድ ስራችን በቀጣይነት ተወዳዳሪ ያደርገዋል
- 28 Social media would help my business to earn more competitive advantage  
ማህበራዊ ሚዲያን መጠቀም ለንግድ ስራዬ ተወዳዳሪነትን እና ተመራጭነትን ይጨምርልኛል
- 29 Social media would help my business ability to outperform competition.  
ማህበራዊ ሚዲያ የንግድ ውድድሩን በበላይነት እንድመራ ይረዳኛል
- 30 Social media would help my business to generate higher profits  
ማህበራዊ ሚዲያ ትርፋማነቴን ይጨምራል

- 31 I know my customers are ready to do business transactions via social media applications.  
ደንበኞቼ ንግድን በሰሻል ሚዲያ ለማከናወን ዝግጁ መሆናቸውን አውቃለሁ
- 32 My customers are demanding the use of social media in doing business transactions with them.  
ደንበኞቼ የንግድ እንቅስቃሴዎችን በማህበራዊ ሚዲያ ነድናደርግ ይጠይቁኛል
- 33 It is easy for my customers to switch to other sellers for similar services/products that I provide.  
ደንበኞቼ ተመሳሳይ ምርት እና አገልግሎት ወደሚሰጡ ተቋማት በትንሽ ምክንያት (በቀላሉ) ለሄዱበኝ ይችላሉ

34 Social media is a popular application; therefore I would like to use it as a business platform, too.

ማህበራዊ ሚዲያ በጣብ ብዙ ሰዎች እየተጠቀሙት በመሆኑ ምክንያት ለንግድ ስራዬ ማህበራዊ ሚዲያን መጠቀም አፈልጋለሁ

35 I follow others in a society for adopting social media.

ሌሎች ማህበራዊ ሚዲያን የሚጠቀሙ ድርጅቶችን እከታተላለሁ

36 I choose to adopt social media because many other businesses are already using it.

ማህበራዊ ሚዲያን ብዙዎች እየተጠቀሙ ስለሆነ እኔም መጠቀም እንዳለብኝ አምናለሁ

37 My friends and family members think we should adopt social media in my business

ጓደኞቼ እና ቤተሰቦቼ ለንግድ ስራዬ ማህበራዊ ሚዲያን መጠቀም እንዳለብኝ ያስባሉ

38 The procedure of using social media is understandable.

ማህበራዊ ሚዲያን ስራ ላይ ለማዋል የአጠቃቀም ቅደም ተከተሉ ግልጽ እና ለመረዳት ምቹ ነው

39 It is easy for us to learn using social media for business purposes

ማህበራዊ ሚዲያን ለንግድ ስራ አገልግሎት ለመጠቀም በቀላሉ ትምህርት ማግኘት ይቻላል

40 It is easy to make use of using social media for business purposes.

ማህበራዊ ሚዲያን ለንግድ አገልግሎት መጠቀም ቀላል ነው

41 Using social media allows me to manage my business operation in an efficient way.

ማህበራዊ ሚዲያን በመጠቀም የንግድ ስራ ማከናወን ውጤታማ ያደርጋል

42 Using social media allows me to increase business productivity

ማህበራዊ ሚዲያን መጠቀም ውጤታማነትን ይጨምራል

43 Using social media allows me to accomplish my business tasks more quickly

ማህበራዊ ሚዲያን መጠቀም ስራዬን በፍጥነት ለማከናወን ያስችላል።

44 The use of social media improves the quality of my business operation.

ማህበራዊ ሚዲያን ለንግድ ስራ መጠቀም ስራን በጥራት ለማከናወን ያስችላል

45 Using social media advances my competitiveness.

ማህበራዊ ሚዲያን መጠቀም ተወዳዳሪነቴን ወደ ላቀ ደረጃ ያሸጋግራል።

ማጠቃለያ

1. የዚህ ጥናት ውጤት ማወቅ ከፈለጉ የኢሜል አድራሻዎን ወይም የቴሌግራም አድራሻዎን ይተውልኝ

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2. ይህን ጥናት በተመለከተ ማንኛውም ተጨማሪ አስተያየት ካለዎት ቀጥሎ ማስቀመጥ ይችላሉ

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በድጋሚ አመሰግናለሁ!

## Annex 2. PCA RESULTS

### Technological Context

Component	Total	% of variance	Accumulated %	Communalities		Component				
				Extraction		1	2	3	4	
1	9.36	49.27	49.27			1	2	3	4	
2	2.42	12.73	61.99			Q1	0.7	0.27	-0.3	0.31
3	1.24	6.5	68.49	Q1	0.75	Q2	0.77	0.19	-0.17	0.26
4	1.08	5.69	74.18	Q2	0.73	Q3	0.77	0.26	-0.37	0.23
5	0.84	4.42	78.6	Q3	0.85	Q4	0.75	0.2	-0.28	0.01
6	0.65	3.41	82.02	Q4	0.69	Q5	0.33	0.26	-0.42	0.24
7	0.55	2.91	84.93	Q5	0.42	Q6	0.16	0.2	-0.89	0.14
8	0.5	2.63	87.56	Q6	0.87	Q7	0.21	0.17	-0.88	0.12
9	0.42	2.23	89.79	Q7	0.86	Q8	0.15	0.29	-0.81	0.28
10	0.36	1.91	91.7	Q8	0.85	Q9	0.38	0.27	-0.4	0.56
11	0.32	1.69	93.39	Q9	0.69	Q10	0.2	0.15	-0.27	0.62
12	0.26	1.39	94.78	Q10	0.53	Q11	0.36	0.29	-0.24	0.57
13	0.23	1.23	96.01	Q11	0.59	Q12	0.11	0.1	-0.21	0.68
14	0.17	0.92	96.93	Q12	0.53	Q13	0.44	0.32	-0.29	0.57
15	0.14	0.75	97.68	Q13	0.71	Q14	0.22	0.28	-0.2	0.73
16	0.13	0.69	98.37	Q14	0.7	Q15	0.09	0.9	-0.16	0.17
17	0.12	0.64	99.01	Q15	0.87	Q16	0.09	0.89	-0.11	0.19
18	0.12	0.62	99.63	Q16	0.85	Q17	0.14	0.88	-0.13	0.09
19	0.07	0.37	100	Q17	0.82	Q18	0.15	0.9	-0.17	0.2
				Q18		Q19	0.13	0.92	-0.15	0.04
				Q19						

Rotated 4 times

Rotated Component Matrix (Varimax)						Component			Component								
							1	2	3		1	2	3	4	5	6	
	Component					Q1	0.7 1	0.2 9	- 0.3 1		Q1	0.6 9	0.2 6	- 0.2 8	0.2 7	0.1 8	- 0.1 6
	1	2	3	4	5	Q2	0.7 4	0.2 1	- 0.1 8		Q2	0.7 5	0.1 8	- 0.1 5	0.3 4	0.0 0.1 7	-
Q1	0.6 9	0.2 7	- 0.3	0.3 8	0.1	Q3	0.7 1	0.2 8	- 0.3 8		Q3	0.7 4	0.2 5	- 0.3 4	0.2 7	0.0 3	- 0.2 3
Q2	0.7 5	0.1 9	- 0.1 7	0.3 3	0.0 4	Q4	0.5 5	0.2	- 0.3		Q4	0.7 7	0.2	- 0.2 6	- 0.0 9	0.2 0.0	- 0.0 8
Q3	0.7 5	0.2 6	- 0.3 7	0.3 1	0.0 2	Q5	0.4	0.2 7	- 0.4 3		Q5	0.2 1	0.2 3	- 0.2 8	0.1 6	0.1	- 0.8 4
Q4	0.7 7	0.2	- 0.2 8	- 0.0 7	0.2	Q6	0.2	0.2 1	- 0.8 9		Q6	0.1 6	0.2	- 0.8 8	0.1 9	0.0 0.1 6	-
Q5	0.3	0.2 6	- 0.4 2	0.3 4	- 0.0 5	Q7	0.2 2	0.1 8	- 0.8 8		Q7	0.2 2	0.1 7	- 0.8 8	0.0 6	0.1 1	- 0.1
Q6	0.1 5	0.2	- 0.8 9	0.1 3	0.0 8	Q8	0.2 9	0.3 1	- 0.8 1		Q8	0.1 6	0.2 9	- 0.8 1	0.2 1	0.1 9	- 0.1 1
Q7	0.2 1	0.1 7	- 0.8 8	0.0 8	0.1 1	Q9	0.6 4	0.3 1	- 0.4		Q9	0.3 4	0.2 7	- 0.4 1	0.6 5	0.0 1	- 0.1 4

Q8	0.1 4	0.2 9	- 0.8 1	0.2 3	0.1 9		Q1	0.5 6	0.1 9	- 0.2 6		Q1	0.1 2	0.1 4	- 0.2 6	0.7 5	- 0.0 6	- 0.3
Q9	0.3 2	0.2 7	- 0.4	0.6 7	0.0 3		Q1	0.6 1	0.3 3	- 0.2 3		Q1	0.3 6	0.2 9	- 0.2 9	0.6 3	0.1 1	0.1 2
Q1 0	0.1 3	0.1 4	- 0.2 7	0.7 9	- 0.0 7		Q1	0.5 4	0.1 4	- 0.2		Q1	0.1 2	0.1	- 0.1 9	0.2 8	0.8 3	- 0.1 1
Q1 1	0.3 2	0.2 8	- 0.2 4	0.5 9	0.1 7		Q1	0.7 3	0.3 5	- 0.2 9		Q1	0.4 3	0.3 2	- 0.2 8	0.4 2	0.4 3	- 0.1 3
Q1 2	0.1 2	0.1	- 0.2 1	0.3	0.8 1		Q1	0.6 4	0.3 4	- 0.1 9		Q1	0.2 4	0.2 8	- 0.1 9	0.5 3	0.5 3	- 0.1
Q1 3	0.4 3	0.3 1	- 0.2 9	0.4 4	0.4 3		Q1	0.1 5	0.9 4	- 0.1 6		Q1	0.0 5	0.9 9	- 0.1 7	0.1 6	0.0 7	- 0.0 2
Q1 4	0.2	0.2 8	- 0.1 9	0.5 4	0.5 4		Q1	0.1 6	0.9 5	- 0.1 1		Q1	0.0 6	0.8 9	- 0.0 9	0.1 9	0.0 3	- 0.1 7
Q1 5	0.0 8	0.9	- 0.1 6	0.1 6	0.0 8		Q1	0.1 7	0.8 3	- 0.1 4		Q1	0.1 7	0.8 8	- 0.1 3	0.0 9	0.0 3	- 0.0 6
Q1 6	0.0 7	0.8 9	- 0.1 1	0.2 3	0.0 2		Q1	0.2 8	0.9 1	- 0.1 7		Q1	0.1 8	0.8 9	- 0.1 6	0.1 3	0.1 6	- 0.1 3
Q1 7	0.1 4	0.8 8	- 0.1 3	0.1 1	0.0 3		Q1	0.0 9	0.9 8	- 0.1 5		Q1	0.1 9	0.9 4	- 0.1 4	0	0.0 7	- 0.0 7



Environmental Context

Explained total variance				Rotated Component Matrix (Varimax)				
Compon ent	Total	% of variance	Accumulated %					
						1	2	3
1	5.74	47.86	47.86					
2	1.67	13.94	61.8		Q26	0.01	-0.58	-0.39
3	1.22	10.19	71.99		Q27	0.38	-0.71	-0.23
4	0.79	6.62	78.61		Q28	0.46	-0.77	-0.06
5	0.65	5.41	84.02		Q29	0.23	-0.81	-0.18
6	0.47	3.92	87.94		Q30	0.28	-0.82	-0.13
7	0.41	3.43	91.37		Q31	0.21	-0.21	-0.8
8	0.33	2.76	94.13		Q32	0.1	-0.15	-0.83
9	0.28	2.34	96.47		Q33	0.41	-0.12	-0.54
10	0.19	1.55	98.02		Q34	0.88	-0.16	-0.22
11	0.13	1.11	99.13		Q35	0.92	-0.16	-0.11
12	0.1	0.87	100		Q36	0.91	-0.11	-0.08
					Q37	0.76	-0.19	-0.12

TAM context

Explained total variance				Rotated Component Matrix (Varimax)			
Compon ent	Total	% of variance	Accumulated %			Component	
1	4.68	58.54	58.54			1	2
2	1.78	22.29	80.83		Q38	0.15	-0.86
3	0.4	4.94	85.78		Q39	0.24	-0.92
4	0.35	4.34	90.12		Q40	0.15	-0.92
5	0.27	3.41	93.52		Q41	0.88	-0.18
6	0.23	2.85	96.37		Q42	0.89	-0.12
7	0.18	2.27	98.64		Q43	0.86	-0.24
8	0.11	1.36	100		Q44	0.86	-0.21
					Q45	0.85	-0.2

### Annex 3. LR RESULTS

#### 1. Modified TOE-TAM Integrated

Model	Coefficient B	Standard error	z	p	Odds Ratio	95% conf. interval
SMA	45.82	21755.97	0	0.998	7.91293E+19	0 - Infinity
Q1	0	15444.43	0	1	1	0 - Infinity
Q2	0	10425.9	0	1	1	0 - Infinity
Q3	0	17708.12	0	1	1	0 - Infinity
Q10	0	9599.24	0	1	1	0 - Infinity
Q12	0	13211.94	0	1	1	0 - Infinity
Q14	0	13864.85	0	1	1	0 - Infinity
Q15	0	16325.79	0	1	1	0 - Infinity
Q16	0	16280.05	0	1	1	0 - Infinity
Q17	0	13684.79	0	1	1	0 - Infinity
Q18	0	15333.53	0	1	1	0 - Infinity
Q19	0	16044.79	0	1	1	0 - Infinity
Q22	0	11272.65	0	1	1	0 - Infinity
Q23	0	15575	0	1	1	0 - Infinity
Q24	0	16543.17	0	1	1	0 - Infinity
Q34	0	22505.51	0	1	1	0 - Infinity
Q35	0	21543.3	0	1	1	0 - Infinity
Q36	0	18885.58	0	1	1	0 - Infinity
Q37	0	14650.84	0	1	1	0 - Infinity
Q41	0	16332.21	0	1	1	0 - Infinity
Q42	0	16188.49	0	1	1	0 - Infinity
Q43	0	13497.87	0	1	1	0 - Infinity
Q44	0	14367.65	0	1	1	0 - Infinity
Q45	0	15341.83	0	1	1	0 - Infinity
Constant	-21.96	34203.36	0	0.999		

Chi-Squared Test				Classification table				
Chi2	df	p				Predicted		
72.35	24	<.001				0	1	Correct
				Observed	0	11	0	100%
					1	0	102	100%
					Total			100%

Modified TOE model

Model	Coefficient B	Standard error	z	p	Odds Ratio	95% confidence interval
Q1	-4.92	2.42	2.03	0.042	0.01	0 - 0.85
Q2	2.5	1.19	2.11	0.035	12.2	1.19 - 124.71
Q3	0.45	2.17	0.21	0.837	1.56	0.02 - 109.9
Q4	-1.52	1.24	1.23	0.219	0.22	0.02 - 2.47
Q10	-0.89	0.74	1.2	0.23	0.41	0.1 - 1.75
Q12	0.5	1.3	0.39	0.698	1.65	0.13 - 20.95
Q14	2.45	1.6	1.53	0.127	11.55	0.5 - 267.03
Q15	-5.68	2.92	1.95	0.051	0	0 - 1.03
Q16	-0.44	2.26	0.2	0.845	0.64	0.01 - 53.53
Q17	-0.45	1.58	0.28	0.778	0.64	0.03 - 14.1
Q18	1.76	1.83	0.97	0.334	5.84	0.16 - 209.61
Q19	4.9	2.68	1.83	0.068	134.71	0.7 - 25832.3
Q22	0.01	1.18	0.01	0.996	1.01	0.1 - 10.18
Q23	-4.96	2.75	1.81	0.071	0.01	0 - 1.52
Q24	4.14	2.67	1.55	0.121	62.86	0.33 - 11814.67
Q34	2.73	1.79	1.52	0.128	15.27	0.46 - 511.58
Q35	4.4	2.63	1.67	0.094	81.57	0.47 - 14144.25
Q36	0.64	1.19	0.54	0.591	1.9	0.18 - 19.78
Q37	-3.15	1.94	1.63	0.104	0.04	0 - 1.91
Constant	-6.05	4.1	1.48	0.14		

Chi-Squared Test		
Chi2	df	p
46.38	19	<.001

Classification table				
		Predicted		
		0	1	Correct
Observed	0	8	3	72.73%
	1	1	102	99.03%
	Total			96.49%

TAM model

Model						
	Coefficient B	Standard error	z	p	Odds Ratio	95% confidence interval
Q41	0.53	0.52	1.01	0.313	1.69	0.61 - 4.7
Q42	0.54	0.56	0.95	0.341	1.71	0.57 - 5.15
Q43	0.15	0.41	0.38	0.704	1.17	0.53 - 2.59
Q44	-0.39	0.57	0.68	0.498	0.68	0.22 - 2.08
Q45	-0.38	0.42	0.92	0.356	0.68	0.3 - 1.54
Constant	0.56	0.9	0.62	0.533		

**Chi-Squared Test**

Chi2	df	p
5.76	5	0.331

**Classification table**

		Predicted		
		0	1	Correct
Observed	0	0	12	0%
	1	0	107	100%
	Total			89.92%