ISSN No - 2348-6635

Journal of Operations Management and Information Technology

Volume No. 13

Issue No. 3

September - December 2025

ENRICHED PUBLICATIONS PVT. LTD

S-9, IInd FLOOR, MLU POCKET,
MANISH ABHINAV PLAZA-II, ABOVE FEDERAL BANK,
PLOT NO-5, SECTOR-5, DWARKA, NEW DELHI, INDIA-110075,
PHONE: - + (91)-(11)-47026006

ISSN No - 2348-6635

Journal of Operations Management and Information Technology

ISSN No - 2348-6635

Aims and Scope

The aim of the journal of Operations Management and Information Technology is to provide academically robust papers, research, critical reviews and opinions on the organizational, social and management issues associated with significant information-based technologies. It is designed to be read by academics, scholars, advanced students, reflective practitioners, and those seeking an update on current experience and future prospects in relation to contemporary information and communications technology themes.

ISSN No - 2348-6635

Journal of Operations Management and Information Technology

ISSN No - 2348-6635

Journal of Operations Management and Information Technology

(Volume No. 13, Issue No. 3, September - December 2025)

Contents

Effects of Social Media Marketing and Ewom on Consumer Choice Decision Related to Restaurant Industry

Muhammad Ali Siddiqui
Istanbul Aydin University
Masters Of Business Administration, Istanbul, Turkey

A B S T R A C T

This study aims to identify impact of social media marketing such as sharing, publishing, visual and electronic word of mouth on consumers' choice decision with the significant and positive effect of the moderator which is bloggers' reputation. In this study, it is believed that with the passage of time, social media marketing in terms of e-business, entertainment and for marketing purpose is playing a significant role. Therefore, social media marketing is the fastest, cheapest and yet the most effective source of marketing. Consumer choice plays an important role in restaurant dining as the taste, ambiance, hygiene, the staff and the management is the criteria a customer assesses on when eating out. The collection of the data will be done through questionnaire survey method to study consumer choice. Quantitative research design approach was used for the hypothesis testing process, the numerical analysis of the independent variable and dependent variable along with the moderator. The results of this study contribute to the eatery/restaurant industry of Pakistan and can be used by the eateries for gathering information of their image, market reputation and future marketing. AMOS software has been used for taking out the results. The number of respondents was 400 which was collected through questionnaire and is directed towards the fast food restaurant industry

KEYWORDS: BLOGGERS REPUTATION, CONSUMER CHOICE DECISION, EWOM, PUBLISHING, SHARING

1. INTRODUCTION

World is changing because of social media platform. People are taking responses from the bloggers and from the electronic words of mouth. Social media showcasing has turned into a vital piece of day by day life which is broadly utilized all around the globe one of the case of interpersonal interaction site is face book which had 400million dynamic clients in 2010 one face book official organization insights layout the breakdown of destinations and now in the current year's second from last quarter confront book had 1.79 billion month to month dynamic clients. Eatery industry is the place they give administration and item both that is the reason it is essential for them to utilize online networking promoting apparatus to specifically draw in and associate with clients all together comprehend their decisions criteria.

2. RESEARCH PURPOSE

The purpose of this research is to examine the moderating role of bloggers reputation in linking social media marketing and electronic word of mouth with consumer choice. There are two independent variables in this study social media marketing and ewom whereas the dependent variable is consumer choice a moderating variable has also been introduced in this study which is bloggers reputation. Data collection is done through questionnaire largely through manually and some through online.

3. HYPOTHESIS STATEMENT

H1: There is a significant and positive relationship between E-WOM and consumer choice decision.

H2: There is a significant and positive relationship between social media marketing and consumer choice decision.

H3: There is a significant and positive effect of the moderator, bloggers' reputation in linking H1 and H2 with consumer choice decision

4. THEORETICAL FRAMEWORK

There are three different theories. One is found in social media integration theory. The second one is design processing theory and the third one in information process theory

5. INFORMATION PROCESS THEORY

1) Revisiting MPAA (Cohen & Reed 2006) it provides the support for the theory in a cross national content of E-WOM 2) Integration Theory (Anderson 1971)Social network for the choice of tourist destination: attitude and behavioral intention 3) Theory of reasoned action (Fishbein and Ajzen 1975) explains the aim to investigate computer usage behavior 4)Theory of planned behavior Our need to share clears up the achievement of buyer survey objectives, talk social gatherings and online long range interpersonal correspondence regions, for example, Twitter. There are two or three mental explanations for this sharing conduct from the need to relate and have a place, the need to help different people who should be seen as somebody with the right affiliations and information. One individual achieves a couple others and each of them can give the message to their game plan of accomplices and so forth. This clears up the viral limit of EWOM. At whatever guide we organize towardmake a buy we at first need to get educated about the subject on the web. Online audits are utilized as fundamental data sources, shape customer points of view towards a thing and impact bargains. We believe the choice of an affirmed singular more than we trust propelling, news by the conventional media or data on a corporate site. This is called 'social affirmation'. Electronic Word of Mouth, all things considered, impacts customer purchasing choices. In like manner, plainly individuals can be decidedly affected or inimically by this. Suitably, e-WOM is fought to be more capable than its separated accomplice (WOM), on account of its ability to accomplish a greater number of individuals in a brief moment and on an overall scale (Hennig-Thurauet al., 2004; Phelps et al., 2004). In light of the Bass (1969) scattering illustrate, the likelihood to hold onto another thing additions as the amount of past buyers rises. As a result of the extended detectable quality of online thing studies from a couple of past buyers we fight that the bigger part effect may be more indispensable on the web. Regardless of the importance of e-WOM, there is yet somewhat number of studies that examine online buyer essential authority and parts of e-WOM, for instance, viral showcasing, in a cross national setting (e.g. Dobele et al., 2007; Fong and Burton, 2008).Hence, the subject of whether e-WOM similarly affects different nationalities is, as it were, unexplored in the educational composition.

6. SOCIAL MEDIA INTEGRATION THEORY

1) Balancing theory

Social dispersing is described as any edge, new or ascending, of online substance creation. Web disseminating contains individual, business, and gathering destinations despite e-books and locales. It

suggests a quick channel to the writer to offer feedback, make request, and have examinations. Electronic long range informal communication particularly Facebook has transformed into a showcasing channel to accomplish target promote. As demonstrated by a study, "Develop your Brand Community Online" electronic informal communication has transformed into a significant showcasing channel to accomplish particularly centered around customers and attracts them with association brands (Hanlon et al., 2008). As demonstrated by Lukka and James (2014) Facebook is a convincing source to publicize your things eventually. Facebook has enabled promoters to alter their advertisements for a specific social event of people. Appropriating is one of the basic parts of today's online electronic long range interpersonal communication foundation. It's what pulls in per users and internet organizing customers and increments their thought in perspective of the quality and subject o information. For this circumstance, restaurant related substance, support reviews, faultfinders and sustenance bloggers' advices pull in customers and accept a critical part by the way they see information.

2) Integration theory(Anderson 1971)

The correspondence in association with sustenance has expanded creating thought throughout the last decennia (Renn, 2008). The purpose behind this correspondence can contrast altogether; building trust and accord, making care, instructing, influencing perceptions, perspectives and feelings, propelling action and advancing behavior (McGloin et al., 2009). In the last decennium the Internet has seen another assortment of specific progressions that go in light of current circumstances under the names of 'web 2.0'. Web 2.0 gave a phase to the headway of web based systems administration which is described as "a social event of Internet- build applications that work in light of the ideological and mechanical foundations of web 2.0, and that allow the creation and exchange of customer delivered content" (Kaplan &Haenlein, 2010, p. 61). This suggests customer delivered substance and dispersions attract buyers towards unmistakable stages and a significant measure of information is available for them to assess. Generally the young period has valued the late years, have ended up being especially mindful and conscious about their sustenance and organization experiences. Dispersing therefore settles on deduction between the open choices the customers are given and can appear differently in relation to yielding with what is being disseminated, who is appropriating it and the authenticity of the sources. Thusly appropriating is a down to earth variable for this examination as it clarifies a couple parts of this investigation and relates to exchange elements used as a piece of this examination. The web 1.0 allowed clients to scrutinize and look information, however web 2.0 grants buyers to make information themselves. This improvement, together with the presentation of a buyer told channel includes basic results for correspondence overall (Cova& Pace, 2006). Worldwide support associations perceive the constrain of web based systems administration and a little bit at a time move their advancing and correspondence spending arranges into new media where individuals all in all gets open entryway for both making and sharing substance. As a result, the association passes control of their picture and correspondence technique to some degree over to the gathering. An eminent instance of this ponder is the possibility of 'viral publicizing' where customers are enlivened to forward a web elevating message to people from their casual group (Lans et al., 2010).

7. DESIGN PROCESSING THEORY

The theory is about how publicists handle the blueprint of the arrangement of the thing that include the purchaser's thought and in conclusion transform into the choice of the client (Henderson & Cote, 1998).

8. FIGURES AND TABLES

TABLE1: RESPONDENTS PROFILE

GENDER			
		FREQUENCY	**PERCENT**
Valid	Male	271	67.8
	Female	129	32.3
	Total	400	100
EDUCATION			
		FREQUENCY	**PERCENT**
Valid	Intermediate	40	10
	Undergraduate	173	43.3
	Post Graduate	187	46.5
	Total	400	100
AGE			
		FREQUENCY	**PERCENT**
Valid	18 to 23 years	187	46.8
	24 to 29 years	141	35.3
	30 to 35 years	41	10.3
	35 years and	31	7.5
	Total	400	100
WORK			
		FREQUENCY	**PERCENT**
Valid	Employed	235	58.8
	Unemployed	165	41.3
	Total	400	100
ORGANIZATION			
		FREQUENCY	**PERCENT**
Valid	Public	43	10.8
	Private	197	49.3
	Total	240	60
Missing	System	160	40
Total		400	100
EXPERIENCE			
		FREQUENCY	**PERCENT**
Valid	Less than 3	139	34.8
	3 to 6 years	49	12.3
	6 to 9 years	18	4.5
	9 to 12 years	16	4
	12 to 15 years	4	1
	More than 15	13	3.3
	Total	239	59.8
Missing	System	161	40.3
Total		400	100

TABLE 2: MEASUREMENTS MODEL ESTIMATIONS

			ESTIMATE	S.E.	C.R.	AVE
S2	<---	SMM	0.744	0.073		
S8	<---	SMM	0.736	0.079		
S3	<---	SMM	0.725	0.079		
S16	<---	SMM	0.817	0.065		
S15	<---	SMM	0.826	0.065		
S14	<---	SMM	0.8	0.072		
S13	<---	SMM	0.969	0.077	0.931	0.773
S12	<---	SMM	0.784	0.067		
S11	<---	SMM	0.897	0.066		
S10	<---	SMM	0.708	0.078		
S9	<---	SMM	0.762	0.065		
S4	<---	SMM	0.915	0.073		
S5	<---	SMM	0.802	0.069		
S6	<---	SMM	0.773	0.074		
S7	<---	SMM	0.793	0.053		
EW18	<---	EWOM	0.85	0.065	0.948	0.818
EW19	<---	EWOM	0.973	0.065		
B21	<---	Bloggers	0.719	0.059		
B22	<---	Bloggers	0.826	0.057	0.977	0.741
C24	<---	Consumer	0.722	0.106		
C25	<---	Consumer	0.997	0.097		
C26	<---	Consumer	0.723	0.103	0.942	0.773
C27	<---	Consumer	0.821	0.107		
C28	<---	Consumer	0.754	0.092		
C29	<---	Consumer	0.746	0.098		
C30	<---	Consumer	0.745	0.113		

TABLE 3: DISCRIMINANT VALIDITY USING FORNELL AND LARCKER (1981) CRITERION

CONSTRUCTS	SOCIAL MEDIA MARKETING	E-WOM	BLOGGERS REPUTATION	CONSUMER CHOICE
Social Media Marketing	**0.879**			
E-WOM	0.603	**0.861**		
Bloggers Reputation	0.746	0.479	**0.905**	
Consumer Choice	0.578	0.214	0.615	**0.887**

TABLE 4: DISCRIMINANT VALIDITY USING HETEROTRAIT-MONOTRAIT (HTMT) RADIO

CONSTRUCTS	SOCIAL MEDIA MARKETING	E- WOM	BLOGGERS REPUTATION	CONSUMER CHOICE
Social Media Marketing				
E-WOM	0.693			
Bloggers Reputation	0.811	0.537		
Consumer Choice	0.626	0.276	0.656	

TABLE 5: MODEL FIT SUMMARY

MODEL	NPAR	CMIN	DF	P	CMIN/DF
Default model	66	1535.194	399	0	3.848
Saturated model	465	0	0		
Independence model	30	6373.65	435	0	14.652
Model	**RMR**	**GFI**		**AGFI**	**PGFI**
Default model	0.064	0.778		0.742	0.668
Saturated model	0	1			
Independence model	0.341	0.208		0.154	0.195

TABLE 6: PATH ANALYSIS

			ESTIMATE	S.E.	T-STATS	P
SMM	<-->	EWOM	0.391	0.042	2.659	***
SMM	<-->	Bloggers	0.337	0.042	7.009	***
SMM	<-->	Consumer	0.283	0.035	3.693	***
EWOM	<-->	Consumer	0.328	0.038	0.019	***
EWOM	<-->	Bloggers	0.395	0.045	0.454	***
Bloggers	<-->	Consumer	0.344	0.041	7.928	***

CONCLUSIONS

This research was conducted in Karachi, Pakistan; the number of respondents was 400 which was collected through questionnaire and is directed towards the fast food restaurant industry. The impact of social media marketing and E-WOM on consumer choice was examined with the moderating role of bloggers reputation. In order to investigate social media marketing and E-WOM were taken as independent variables and consumer choice was our dependent variable, bloggers reputation was added as a moderator. The beneficial purpose was to make aware the fast food restaurant industry about its consumer choices and to address the problem of consumers regarding decision making. Social media marketing has significantly positive impact on EWOM. Bloggers and Consumers have positively significant impact on social media marketing. On the contrary the study also says that EWOM has certainly positive and statistically significant effects on consumer choice and bloggers reputation.

REFERENCES

1. *Christodoulides, G., Michaelidou, N., &Argyriou, E. (2012). Cross-national differences in e- WOM influence. European Journal of Marketing, 46(11/12), 1689–1707. https://doi.org/10.1108/03090561211260040*
2. *Pietro, L. Di, Virgilio, F. Di, &Pantano, E. (2012). Social network for the choice of tourist destination: attitude and behavioural intention. Journal of Hospitality and Tourism Technology, 3(1), 60–76. https://doi.org/10.1108/17579881211206543*
3. *Liu, Y., & Lopez, R. A. (2016). The impact of social media conversations on consumer brand choices. Marketing Letters, 27(1), 1–13. https://doi.org/10.1007/s11002-014-9321-2*
4. *Ur Rehman, F., Ilyas, M., Nawaz, T., &Hyder, S. (2014). How Facebook Advertising Affects Buying Behavior of Young Consumers: The Moderating Role of Gender. Academic ResearchInternational, 5(4), 395–404. Retrieved from www.savap.org.pk%5Cnwww.journals.savap.org.pk*
5. *López, M., & Sicilia, M. (2013). How WOM Marketing Contributes to New Product Adoption: Testing Competitive Communication Strategies. European Journal of Marketing, 47(7), 1089–1114. https://doi.org/10.1108/03090561311324228*

Food Security: A Strategy for Poverty Alleviation in India

Dr. S. Nagabhushana, H. B. Appaji
Assistant Professor of Commerce Government First Grade College, Harohalli Kanakapura Taluk, Ramanagara District, Karnataka – 562112
Assistant Professor of Economics Rural Degree College, Kanakapura Ramanagara District, Karnataka – 562117

ABSTRACT

Poverty has the results of breeding social disillusionment with reference to what the objectives are and members responsibilities towards attainment of the objectives even as ignorance maintains poverty, so also can poverty perpetuate ignorance, since the victims cannot think. And pray beyond where subsequent meal is coming from. The magnitude and extent of poverty in any country depend upon two factors: the typical level of value and therefore the degree of inequality in its distribution. Clearly, for any given level of National per capita income, the more unequal the distribution, the greater the incidence of poverty. Similarity, for any given distribution, the lower the typical income level, the greater the incidence of poverty.

Key Words:Poverty, ignorance, victims, national per capita income, distribution, income level.

INTRODUCTION

The International Bank for Reconstruction and Development (IBRD) defines the poverty as a "multidimensional phenomenon, encompassing inability to satisfy basic needs, lack control, poor health, malnutrition, lack of shelter, poor access to water and sanitation, vulnerability to shocks, violence and crime, lack of political freedom".

The food and Agriculture organization of united Nation (FAO) defines food security as "access by all people at all times to food needed for a Healthy and active life". However, achieving food security necessitates thatfood be available on a regular basis and that all those people in need of it can obtain it.According to FAO, chronic under nutrition and food insecurity are principally caused by a mixture of things like low agricultural productivity, high seasonal and year to year variability in food supplies and lack of off-farm employment opportunities.

The issue of poverty alleviation is recently emerging as a serious subject of concern in national and international policy discourse. However, the intensity of poverty in less developing countries is more severe than that of the developed countries. Poverty is seen as a drag of economic development in less developing countries while growth is seemed to be the issues of developed countries. The magnitude and extent of poverty in any country depend upon two factors: the typical level of value and the degree of inequality in its distribution of income. Clearly, for any given level of National per capita income, the more unequal the distribution, the greater the incidence of poverty. Similarly, for any given distribution, the lower the average income level, the greater the incidence of poverty.

During the 1970s, the interest in poverty increases development economists took initiative in measuring its magnitude, within and across countries by attempting to determine a standard poverty level. They went even further and devised the widely used concept of absolute poverty. It is meant to represent a

selected minimum level of income needed to satisfy the essential physical need of food, clothing, shelter, so as to make sure continued survival. In addition to struggling on low income many people in developing nations fight a constant battle against malnutrition disease and ill health.

Although there have been significant improvements since the 1960s, in the least developed countries of the planet, anticipation in 1998 still averaged only 48 years, compared to 63 years among other developing countries and 75 years in developed nations. In the 1990s, the situation continues to deteriorate in sub-Saharan African with deep declines in food consumption and widespread famine in both Asia and Africa, over 60 percent of the population barely met minimum calorie requirements necessary to maintain adequate health, moreover, it has been estimated that the calorie deficit amounted to less than a 2 percent of the world cereal production. This contradicts the widely held view that malnutrition is inevitable result of imbalance between World populations and world food supplies. The mores likely explanation is often found within the world income distribution. Thus, malnutrition and poor health in the developing world are maybe even more a matter of food production, despite, the 2 factors are indirectly interrelated.The basic reason for the concentration of individuals and production in agricultural and other primary production activities in developing countries may be a simple fact at low income levels, the primary priorities of a person are food, clothing and shelter. Agricultural productivity is low not only due to large numbers of individuals in reference to available land but also LDC agricultural is usually characterized by primitive technologies, poor organization and limited physical and human capital inputs. Technological backwardness persists because developing country agriculture is predominantly non-commercial peasant farming. It is no wonder that efforts to improve efficiency of agricultural production and increase the yields of rice, wheat, maize, (corn), soya beans, and millet are now and can continue to be top priority development objectives.

Food security, a way of poverty alleviation efforts in India is sustained through local initiation also as international assistance. There are however, several obstacles to the effective implementation of the programmes. Some of the obstacles pivots from the very fact that a lot of the programme were either not spotless, formulated or implementation in a organized manner, most of the poverty reduction programmes have relied solely on government subvention for his or her operation leading to financial problem during the amount of decline in government revenue, discontinuity and other bureaucratic decent. The programmes also fail as a result of inconsistency, corruption of state officials and public servants, poor target mechanism and failure to focus directly on the poor and thereby reducing poverty.

OBJECTIVES OF THE STUDY

The aim of this study is to look at the impact of food security as a way of poverty alleviation in India. In addition this study seeks to examine:

a. The impact of National programme for food security on poverty alleviation in India.
b. The effect of food security in alleviation poverty.

SIGNIFICANCE OF STUDY

An examination of indicator of economic performances shows how that poverty has eaten deep into the material of the society. The GDP is severely declining, unemployment increasing, low level of agricultural productivity, high seasonal and year to year variability in food supplies and low level of income. In order to scale back hungers, action is required within the following areas: ensuring enabling conditions, improving access to food, producing food, increasing the role of trade, dealing adequately with disaster and investing in food security. Poverty is considered as one of the major causes of food insecurity and poverty eradication is essential to improve access to food.

SCOPE AND LIMITATION OF STUDY

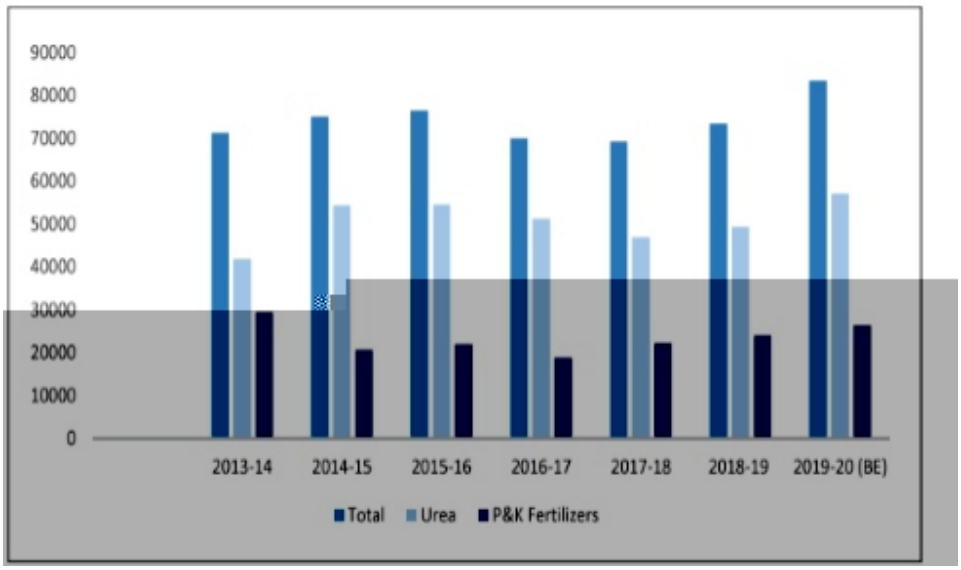
This study is administered with emphasis on food security as a way of poverty alleviation in India. The study is limited to the analysis of the contribution of food security in terms of: poverty reduction through food security and improving agricultural productivity.

FOOD MANAGEMENT AND ANALYSIS

The main purpose apropos food management being procurement apropos food grains from farmers at compromising prices, disposal of food grains to consumers, particularly along vulnerable sections of society at affordable prices along with maintenance of food intermediates for food security and price establishment. Farcical nodal authority which commences procurement and storage of food grain is the Food Corporation of India (FCI). The distribution of food grains is primarily under the National Food Security Act, 2013 (NFSA) and other welfare schemes of the Government and is authorized by the scale of allotment and being overtaken by the beneficiaries.

The NFSA which came into force in July, 2013, provides for uncovering of upto 75 per cent of the rural population and upto 50 per cent of the urban population for receiving food grains through Targeted Public Distribution System (TPDS), thus uncovering about two thirds of the population of the country for receiving food grains at the rate of 1/2/3 per kg for nutria- cereals/wheat/rice respectively. Recognizing beneficiaries under the Act is along two categories- households covered under Antyodaya Anna Yojana (AAY) and Priority Households, within the coverage determined for the State/UT.

Figure - 1.1: Fertilizer Subsidy during 2013-14 to 2019-20 (Rs.Crores)



Source: Economic Survey of India 2018-19

Priority Households are designated to receive 5 kg per person per month, AAY households, which constitute the poorest of the poor, continue to receive 35 Kg of food grainsper household per month. At present, the Act is being implemented in all the States/UTs covering about 80 crore persons to get highly subsidized food grains.

ALLOCATION OF FOODGRAINS UNDER NFSA/ TARGETED PUBLIC DISTRIBUTION SYSTEM (TPDS)

NFSA has been established in all States/UTs. In Chandigarh, Puducherry and urban areas of Dadra & Nagar Haveli, the NFSA is being implemented in cash transfer mode, under which food subsidy is being transferred into the bank accounts of beneficiaries who then have a choice to buy food grains from open market. During the year 2019-20, Government of India has allocated 603.88 lakh tonnes of food grains to States/ UTs under NFSA and other Welfare Schemes as on 31st December 2019

Table – 1.1 : Allocation of Food grains to States/UTs under NFSA and Other Welfare Schemes

Source: Economic survey of India 2018-19

DISCUSSION AND RECOMMENDATIONS

India's food security depends on producing cereal crops, also increasing in quantity of its fruits production, vegetables and milk to satisfy the stress of a growing population with rising incomes. To do so, a productive, competitive, diversified and sustainable agricultural sector will be got to emerge at an accelerated pace.

The sharp rise in food-grain production during India's revolution of the 1970s enabled the country to realize self-sufficiency in food-grains and debar the threat of famine. Agricultural intensification within the 1970s to 1980s saw an optimised demand for rural labor that raised rural wages and, alongside declining food prices, reduced rural poverty. However agricultural growth amidst 1990s and 2000s bogged down, averaging about 3.5% yearly once, and cereal yields have optimised by just one.4% yearly once, within the 2000s. The slow-down in agricultural growth has become a serious cause for consideration. India's rice yields are one- third of China's and about half those in Vietnam and Indonesia. The same is true for many other agricultural commodities.

Policy makers will thus be got to initiate and/or conclude policy actions and public programs to modify the world faraway from the prevailing policy and organisational regime that appears to be no longer viable and build a solid foundation stone for a much more productive, internationally competitive, and diversified agricultural sector.Poverty alleviation and community actions while agricultural growth being, in itself, provides the bottom for optimised incomes, for the 170 million approximately rural persons that are below the poverty level, optimal measures are required to make this growth inclusive. For instance, a rural livelihoods program that empowers communities to become self-reliant has been found to be particularly effective and well-suited for scaling-up.

This program advertises the formation of self-help groups, optimizes community savings, and promotes local initiatives to increase incomes and employment. By federating to become larger individuals, these organisations of the poor gain the strength to barter surpassed prices and market access for his or her products, and also gain the political power over local governments to supply them with better technical and social services. These self-help groups are particularly effective at reaching women and impoverished families.

Agriculture remains the pre-dominant occupation in India for vast sections of the population. Over the years, several new challenges have emerged before the sector. With fragmentation of agricultural holdings and exhaustion of water resources, the acceptance of a resource-efficient, ICT based climate-smart agriculture can enhance agricultural productivity and sustainability. Smallholder farming can be a remunerative livelihood prospect with the implementation of appropriate technologies and relevance of natural, organic and Zero Budget Natural Farming. To renovate the rural economy, superior prominence should be given to allied sectors with a foremost focus on dairy, poultry, fisheries and rearing of small ruminants. The rationalization of food subsidy and superior use of technology in food management will ensure food security for all.

Agricultural conservatory plays a key role in boosting agricultural productivity, enhancing food security, improving rural livelihoods and varying farmers' preferences and farming practices optimistically (for example, adoption of better-quality seeds and critical along loss through getting their crops insured).

Fisheries is a fast-growing sector in India, which provides nutrition and food security to a huge population of the country moreover providing income and employment to more than 14.5 million people. The Global Food Security Index (GFSI), 2018 measured four core issues of food security transversely 113 countries: (i) affordability, (ii) availability, (iii) quality & safety and (iv) natural resources and resilience.

CONCLUSION

With the implementation of the National Food Security Act from July 2013, the food subsidy bill has increased from Rs.113171.2 crore in 2014-15 to Rs.171127.5 crore in 2018- 19. India's food management should focus on rationalisation of food subsidy while addressing the challenges of food security, especially of the most vulnerable sections. Though the interests of the vulnerable sections of the population need to be safeguarded, for sustainability of food security operations, the issue of burgeoning food subsidy bill needs to be addressed

REFERENCES:

i. K. Baby - Food Security and Open Dissemination Framework Issues and concerns. Kurukshetra Provincial Improvement diary, Walk 2012.

ii. A. Hazra - Food Security on Provincial India: Neediness in the Place that is known for Bounty.Kurukshetra Provincial Improvement diary, Walk 2012.

iii. Olivier Ecker,Derek Headey, - Improving the Estimation of Food Security Global food strategy Exploration establishment.

iv. Economic Survey of India 2017-18, 2018-19.

v. K.N Tiwari– Food Security: A Solution for Lack of healthy sustenance. Kurukshetra Country Improvement diary, Nov 2013.

vi. Vyas - Financial and Political Week after week, 2000, 35(50).

Role And Importance of Statistics in Psychological Research

Ms. Priyanka Chaudhary
HOD & Assistant Professor, Department of Psychology, Stani Memorial P.G. College, Mansarovar, Jaipur, Rajasthan

A B S T R A C T

Statistics is a wide subject usefull in almost all disciplines especially including Psychology in Research studies. Each and every researcher should have some knowledge in Statistics and must use statistical tools in his or her research, one should know about the importance of statistical tools and how to use them in their research or survey. The quality assurance of the work must be dealt with: the statistical operations necessary to control and verify the analytical procedures as well as the resulting data making mistakes in analytical work is unavoidable. This is the reason why a multitude of different statistical tools is, required some of them simple, some complicated, and often very specific for certain purposes. In analytical work, the most important common operation is the comparison of data, or sets of data, to quantify accuracy (bias) and precision. Fortunately, with a few simple convenient statistical tools most of the information needed in regular psychological analysis work can be obtained: the "t-test, the "F-test", and regression analysis. Clearly, statistics are a tool, not an aim. Simple inspection of data, without statistical treatment, by an experienced and dedicated psychological analyst may be just as useful as statistical figures on the desk of the disinterested. The value of statistics lies with organizing and simplifying data, to permit some objective estimate showing that an analysis is under control or that a change has occurred. Equally important is that the results of these statistical procedures are recorded and can be retrieved. The key is to sift through the overwhelming volume of data available to organizations and businesses and correctly interpret its implications. But to sort through all this information, you need the right statistical data analysis tools. Hence in this paper, author have made an attempt to give a brief report or study on role and importance of Statistical tools used in psychological research studies.

INTRODUCTION

The subject Statistics is widely used in almost all fields but predominatey in this research paper psychological importance of statstcis is been highlighted. .. While doing research in the psychology fields, the researchers should have some awareness in using the statistical tools which helps them in drawing rigorous and good conclusions. The most well known Statistical tools are the mean, the arithmetical average of numbers, median and mode, Range, dispersion , standard deviation, inter quartile range, coefficient of variation, etc. There are also software packages like SAS and SPSS which are useful in interpreting the results for large sample size.

The Statistical analysis depends on the objective of the study. The objective of a survey is to obtain information about the situation of the population study. The first Statistical task istherefore is to do a descriptive analysis of variables. In this analysis it is necessary to present results obtained for each type of variable. For qualitative and dichotomous variables, results must be presented as frequencies and percentages. For quantitative variables, the presentation is as means and deviations. After this analysis, you can access the association between variables and predictive analysis based on multiple regression models. You can also use software packages like SPSS, EPInfo, STATA, Minitab, Open Epi, Graph pad and many others depending on your usage and familiarity with the software. You should also start looking at the distributions of age, gender, race and any measures of socio-economic status that you have

(income, education level, access to medical care). These distributions will help to inform your analysis in terms of possible age- adjustment, weighting and another analytical tools available to address issues of bias and non representative samples.

Survey analysis is one of the most commonly used research methods, scholars, market researchers and organization of all sizes use surveys to measure public opinion. Researchers use a wide range of statistical methods to analyze survey data. They do this using statistical software packages that are designed for research professionals. Popular programs include SAS, SPSS and STATA. However, many forms of survey data analysis can be done with a spread sheet program such as EXCEL, which is part of Microsoft's popular office package. EXCEL and other spreadsheet programs are user-friendly and excellent for entering, coding and storing survey data.

RESEARCH METHOD

There are many forms of empirical studies in psychology, including case reports, controlled experiments, quasiexperiments, statistical simulations, surveys, observational studies, and studies of studies (meta-analyses). Some are hypothesis generating: They explore data to form or sharpen hypotheses about a population for assessing future hypotheses. Some are hypothesis testing: They assess specific a priori hypotheses or estimate parameters by random sampling from that population. Some are meta-analytic: They assess specific a priori hypotheses or estimate parameters (or both) by synthesizing the results of available studies.

Some researchers have the impression or have been taught to believe that some of these forms yield information that is more valuable or credible than others (see Cronbach, 1975, for a discussion). Occasionally proponents of some research methods disparage others. In fact, each form of research has its own strengths, weaknesses, and standards of practice.

Population

The interpretation of the results of any study depends on the characteristics of the population intended for analysis. Define the population (participants, stimuli, or studies) clearly. If control or comparison groups are part of the design, present how they are defined.

Psychology students sometimes think that a statistical population is the human race or, at least, college sophomores. They also have some difficulty distinguishing a class of objects versus a statistical population-that sometimes we make inferences about a population through statistical methods, and other times we make inferences about a class through logical or other nonstatistical methods. Populations may be sets of potential observations on people, adjectives, or even research articles. How a population is defined in an article affects almost every conclusion in that article.

Sample

Describe the sampling procedures and emphasize any inclusion or exclusion criteria. If the sample is stratified (e.g., by site or gender) describe fully the method and rationale. Note the proposed sample size for each subgroup.

Interval estimates for clustered and stratified random samples differ from those for simple random samples. Statistical software is now becoming available for these purposes. If you are using a convenience sample (whose members are not selected at random), be sure tomake that procedure clear to your readers. Using a convenience sample does not automatically disqualify a study from publication,

but it harms your objectivity to try to conceal this by implying that you used a random sample. Sometimes the case for the representativeness of a convenience sample can be strengthened by explicit comparison of sample characteristics with those of a defined population across a wide range of variables.

Assignment

Random assignment. For research involving causal inferences, the assignment of units to levels of the causal variable is critical. Random assignment (not to be confused with random selection) allows for the strongest possible causal inferences free of extraneous assumptions. If random assignment is planned, provide enough information to show that the process for making the actual assignments is random.

There is a strong research tradition and many exemplars for random assignment in various fields of psychology. Even those who have elucidated quasi-experimental designs in psychological research (e.g., Cook & Campbell, 1979) have repeatedly emphasized the superiority of random assignment as a method for controlling bias and lurking variables. "Random" does not mean "haphazard." Randomization is a fragile condition, easily corrupted deliberately, as we see when a skilled magician flips a fair coin repeatedly to heads, or innocently, as we saw when the drum was not turned sufficiently to randomize the picks in the Vietnam draft lottery. As psychologists, we also know that human participants are incapable of producing a random process (digits, spatial arrangements, etc.) or of recognizing one. It is best not to trust the random behavior of a physical device unless you are an expert in these matters. It is safer to use the pseudorandom sequence from a welldesigned computer generator or from published tables of random numbers. The added benefit of such a procedure is that you can supply a random number seed or starting number in a table that other researchers can use to check your methods later.

Nonrandom assignment. For some research questions, random assignment is not feasible. In such cases, we need to minimize effects of variables that affect the observed relationship between a causal variable and an outcome. Such variables are commonly called confounds or covariates. The researcher needs to attempt to determine the relevant covariates, measure them adequately, and adjust for their effects either by design or by analysis. If the effects of covariates are adjusted by analysis, the strong assumptions that are made must be explicitly stated and, to the extent possible, tested and justified. Describe methods used to attenuate sources of bias, including plans for minimizing dropouts, noncompliance, and missing data.

Authors have used the term "control group" to describe, among other things, (a) a comparison group, (b) members of pairs matched or blocked on one or more nuisance variables, (c) a group not receiving a particular treatment, (d) a statistical sample whose values are adjusted post hoc by the use of one or more covariates, or (e) a group for which the experimenter acknowledges bias exists and perhaps hopes that this admission will allow the reader to make appropriate discounts or other mental adjustments. None of these is an instance of a fully adequate control group.

If we can neither implement randomization nor approach total control of variables that modify effects (outcomes), then we should use the term "control group" cautiously. In most of these cases, it would be better to forgo the term and use "contrast group" instead. In any case, we should describe exactly which confounding variables have been explicitly controlled and speculate about which unmeasured ones could lead to incorrect inferences. In the absence of randomization, we should do our best to investigate sensitivity to various untestable assumptions.

Measurement

Variables. Explicitly define the variables in the study, show how they are related to the goals of the study, and explain how they are measured. The units of measurement of allvariables, causal and outcome, should fit the language you use in the introduction and discussion sections of your report.

A variable is a method for assigning to a set of observations a value from a set of possible outcomes. For example, a variable called "gender" might assign each of 50 observations to one of the values male or female. When we define a variable, we are declaring what we are prepared to represent as a valid observation and what we must consider as invalid. If we define the range of a particular variable (the set of possible outcomes) to be from 1 to 7 on a Likert scale, for example, then a value of 9 is not an outlier (an unusually extreme value). It is an illegal value. If we declare the range of a variable to be positive real numbers and the domain to be observations of reaction time (in milliseconds) to an administration of electric shock, then a value of 3,000 is not illegal; it is an outlier.

Naming a variable is almost as important as measuring it. We do well to select a name that reflects how a variable is measured. On this basis, the name "IQ test score" is preferable to "intelligence" and "retrospective self-report of childhood sexual abuse" is preferable to "childhood sexual abuse." Without such precision, ambiguity in defining variables can give a theory an unfortunate resistance to empirical falsification. Being precise does not make us operationalists. It simply means that we try to avoid excessive generalization.

Editors and reviewers should be suspicious when they notice authors changing definitions or names of variables, failing to make clear what would be contrary evidence, or using measures with no history and thus no known properties. Researchers should be suspicious when code books and scoring systems are inscrutable or more voluminous than the research articles on which they are based. Everyone should worry when a system offers to code a specific observation in two or more ways for the same variable.

Instruments. If a questionnaire is used to collect data, summarize the psychometric properties of its scores with specific regard to the way the instrument is used in a population. Psychometric properties include measures of validity, reliability, and any other qualities affecting conclusions. If a physical apparatus is used, provide enough information (brand, model, design specifications) to allow another experimenter to replicate your measurement process.

There are many methods for constructing instruments and psychometrically validating scores from such measures. Traditional true-score theory and item-response test theory provide appropriate frameworks for assessing reliability and internal validity. Signal detection theory and various coefficients of association can be used to assess external validity. Messick (1989) provides a comprehensive guide to validity.

It is important to remember that a test is not reliable or unreliable. Reliability is a property of the scores on a test for a particular population of examinees (Feldt & Brennan, 1989). Thus, authors should provide reliability coefficients of the scores for the data being analyzed even when the focus of their research is not psychometric. Interpreting the size of observed effects requires an assessment of the reliability of the scores.

Besides showing that an instrument is reliable, we need to show that it does not correlate strongly with other key constructs. It is just as important to establish that a measure does not measure what it should not measure as it is to show that it does measure what it should.

Researchers occasionally encounter a measurement problem that has no obvious solution. This happens when they decide to explore a new and rapidly growing research area that is based on a previous researcher's well-defined construct implemented with a poorly developed psychometric instrument. Innovators, in the excitement of their discovery, sometimes give insufficient attention to the quality of their instruments. Once a defective measure enters the literature, subsequent researchers are reluctant to change it. In these cases, editors and reviewers should pay special attention to the psychometric properties of the instruments used, and they might want to encourage revisions (even if not by the scale'sauthor) to prevent the accumulation of results based on relatively invalid or unreliable measures. Procedure. Describe any anticipated sources of attrition due to noncompliance, dropout, death, or other factors. Indicate how such attrition may affect the generalizability of the results. Clearly describe the conditions under which measurements are taken (e.g., format, time, place, personnel who collected data). Describe the specific methods used to deal with experimenter bias, especially if you collected the data yourself Despite the long-established findings of the effects of experimenter bias (Rosenthal, 1966), many published studies appear to ignore or discount these problems. For example, some authors or their assistants with knowledge of hypotheses or study goals screen participants (through personal interviews or telephone conversations) for inclusion in their studies. Some authors administer questionnaires. Some authors give instructions to participants. Some authors perform experimental manipulations. Some tally or code responses. Some rate videotapes.

An author's self-awareness, experience, or resolve does not eliminate experimenter bias. In short, there are no valid excuses, financial or otherwise, for avoiding an opportunity to double-blind. Researchers looking for guidance on this matter should consult the classic book of Webb, Campbell, Schwartz, and Sechrest (1966) and an exemplary dissertation (performed on a modest budget) by Baker (1969).

Power and sample size. Provide information on sample size and the process that led to sample size decisions. Document the effect sizes, sampling and measurement assumptions, as well as analytic procedures used in power calculations. Because power computations are most meaningful when done before data are collected and examined, it is important to show how effect-size estimates have been derived from previous research and theory in order to dispel suspicions that they might have been taken from data used in the study or, even worse, constructed to justify a particulars ample size. Once the study is analyzed, confidence intervals replace calculated power in describing results.

Largely because of the work of Cohen (1969, 1988), psychologists have become aware of the need to consider power in the design of their studies, before they collect data. The intellectual exercise required to do this stimulates authors to take seriously prior research and theory in their field, and it gives an opportunity, with incumbent risk, for a few to offer the challenge that there is no applicable research behind a given study. If exploration were not disguised in hypothetico-deductive language, then it might have the opportunity to influence subsequent research constructively.

Computer programs that calculate power for various designs and distributions are now available. One can use them to conduct power analyses for a range of reasonable alpha values and effect sizes. Doing so reveals how power changes across this range and overcomes a tendency to regard a single power estimate as being absolutely definitive.

Many of us encounter power issues when applying for grants. Even when not asking for money, think about power. Statistical power does not corrupt.

Complications

Before presenting results, report complications, protocol violations, and other unanticipated events in data collection. These include missing data, attrition, and nonresponse. Discuss analytic techniques devised to ameliorate these problems. Describe nonrepresentativeness statistically by reporting patterns and distributions of missing data and contaminations. Document how the actual analysis differs from the analysis planned before complications arose. The use of techniques to ensure that the reported results are not produced by anomalies in the data (e.g., outliers, points of high influence, nonrandom missing data, selection bias, attrition problems) should be a standard component of all analyses.

As soon as you have collected your data, before you compute any statistics, look at your data. Data screening is not data snooping. It is not an opportunity to discard data orchange values to favor your hypotheses. However, if you assess hypotheses without examining your data, you risk publishing nonsense.

Computer malfunctions tend to be catastrophic: A system crashes; a file fails to import; data are lost. Less well-known are more subtle bugs that can be more catastrophic in the long run. For example, a single value in a file may be corrupted in reading or writing (often in the first or last record). This circumstance usually produces a major value error, the kind of singleton that can make large correlations change sign and small correlations become large.

Graphical inspection of data offers an excellent possibility for detecting serious compromises to data integrity. The reason is simple: Graphics broadcast; statistics narrowcast. Indeed, some international corporations that must defend themselves against rapidly evolving fraudulent schemes use real-time graphic displays as their first line of defense and statistical analyses as a distant second. The following example shows why. stacked like a histogram) and scales used for each variable. The three variables shown are questionnaire measures of respondent's age (AGE), gender (SEX), and number of years together in current relationship (TOGETHER). The graphic in Figure 1 is not intended for final presentation of results; we use it instead to locate coding errors and other anomalies before we analyze our data. Figure 1 is a selected portion of a computer screen display that offers tools for zooming in and out, examining points, and linking to information in other graphical displays and data editors. SPLOM displays can be used to recognize unusual patterns in 20 or more variables simultaneously. We focus on these three only.

Modem statistical packages offer graphical diagnostics for helping to determine whether a model appears to fit data appropriately. Most users are familiar with residual plots for linear regression modeling. Fewer are aware that John Tukey's paradigmatic equation, data = fit + residual, applies to a more general class of models and has broad implications for graphical analysis of assumptions. Stemand- leaf plots, box plots, histograms, dot plots, spread/level plots, probability plots, spectral plots, autocorrelation and cross-correlation plots, co-plots, and trellises (Chambers, Cleveland, Kleiner, & Tukey, 1983; Cleveland, 1995; Tukey, 1977) all serve at various times for displaying residuals, whether they arise from analysis of variance (ANOVA), nonlinear modeling, factor analysis, latent vari- able modeling, multidimensional scaling, hierarchical linear modeling, or other procedures..

Hypothesis tests. It is hard to imagine a situation in which a dichotomous accept- reject decision is better than reporting an actual p value or, better still, a confidence interval. Never use the unfortunate expression "accept the null hypothesis. " Always provide some effectsize estimate when reporting a p value. Cohen (1994) has written on this subject in this journal. All psychologists would benefit from reading his insightful article.

Effect sizes. Always present effect sizes for primary outcomes. If the units of measurement are meaningful on a practical level (e.g., number of cigarettes smoked per day), then we usually prefer an unstandardized measure (regression coefficient or mean difference) to a standardized measure (r or d). It helps to add brief comments that place these effect sizes in a practical and theoretical context.

APA's (1994) publication manual included an important new "encouragement" (p. 18) to report effect sizes. Unfortunately, empirical studies of various journals indicate that the effect size of this encouragement has been negligible (Keselman et al., 1998; Kirk, 1996; Thompson & Snyder, 1998). We must stress again that reporting and interpreting effect sizes in the context of previously reported effects is essential to good research. It enables readers to evaluate the stability of results across samples, designs, and analyses. Reporting effect sizes also informs power analyses and meta-analyses needed in future research.

Fleiss (1994), Kirk (1996), Rosenthal (1994), and Snyder and Lawson (1993) have summarized various measures of effect sizes used in psychological research. Consult these articles for information on computing them. For a simple, general purpose display of thepractical meaning of an effect size, see Rosenthal and Rubin (1982). Consult Rosenthal and Rubin (1994) for information on the use of "counternull intervals" for effect sizes, as alternatives to confidence intervals.

Interval estimates. Interval estimates should be given for any effect sizes involving principal outcomes. Provide intervals for correlations and other coefficients of association or variation whenever possible.

Confidence intervals are usually available in statistical software; otherwise, confidence intervals for basic statistics can be computed from typical output. Comparing confidence intervals from a current study to intervals from previous, related studies helps focus attention on stability across studies (Schmidt, 1996). Collecting intervals across studies also helps in constructing plausible regions for population parameters. This practice should help prevent the common mistake of assuming a parameter is contained in a confidence interval.

Multiplicities. Multiple outcomes require special handling. There are many ways to conduct reasonable inference when faced with multiplicity (e.g., Bonferroni correction ofp values, multivariate test statistics, empirical Bayes methods). It is your responsibility to define and justify the methods used.

Statisticians speak of the curse of dimensionality. To paraphrase, multiplicities are the curse of the social sciences. In many areas of psychology, we cannot do research on important problems without encountering multiplicity. We often encounter many variables and many relationships.

One of the most prevalent strategies psychologists use to handle multiplicity is to follow an ANOVA with pairwise multiple-comparison tests. This approach is usually wrong for several reasons. First, pairwise methods such as Tukey's honestly significant difference procedure were designed to control a

familywise error rate based on the sample size and number of comparisons. Preceding them with an omnibus F test in a stagewise testing procedure defeats this design, making it unnecessarily conservative. Second, researchers rarely need to compare all possible means to understand their results or assess their theory; by setting their sights large, they sacrifice their power to see small. Third, the lattice of all possible pairs is a straightjacket; forcing themselves to wear it often restricts researchers to uninteresting hypotheses and induces them to ignore more fruitful ones.

As an antidote to the temptation to explore all pairs, imagine yourself restricted to mentioning only pairwise comparisons in the introduction and discussion sections of your article. Higher order concepts such as trends, structures, or clusters of effects would be forbidden. Your theory would be restricted to first-order associations. This scenario brings to mind the illogic of the converse, popular practice of theorizing about higher order concepts in the introduction and discussion sections and then supporting that theorizing in the results section with atomistic pairwise comparisons. If a specific contrast interests you, examine it. If all interest you, ask yourself why. For a detailed treatment of the use of contrasts, see Rosenthal, Rosnow, and Rubin (in press).

There is a variant of this preoccupation with all possible pairs that comes with the widespread practice of printing p values or asterisks next to every correlation in a correlation matrix. Methodologists frequently point out that these p values should be adjusted through Bonferroni or other corrections. One should ask instead why any reader would want this information. The possibilities are as follows:

1. All the correlations are "significant." If so, this can be noted in a single footnote.
2. None of the correlations are "significant." Again, this can be noted once. We need to be reminded that this situation does not rule out the possibility that combinations or subsets of the correlations may be "significant." The definition of the null hypothesis for the global test may not include other potential null hypotheses that might be rejected if they were tested.
3. A subset of the correlations is "significant." If so, our purpose in appending asterisks would seem to be to mark this subset. Using "significance" tests in this way is really a highlighting technique to facilitate pattern recognition. If this is your goal in presenting results, then it is better served by calling attention to the pattern (perhaps by sorting the rows and columns of the correlation matrix) and assessing it directly.

This would force you, as well, to provide a plausible explanation.

There is a close relative of all possible pairs called "all possible combinations." We see this occasionally in the publishing of higher way factorial ANOVAs that include all possible main effects and interactions. One should not imagine that placing asterisks next to conventionally significant effects in a five-way ANOVA, for example, skirts the multiplicity problem. A typical five-way fully factorial design applied to a reasonably large sample of random data has about an 80% chance of producing at least one significant effect by conventional F tests at the .05 critical level (Hurlburt & Spiegel, 1976).

Underlying the widespread use of all-possible-pairs methodology is the legitimate fear among editors and reviewers that some researchers would indulge in fishing expeditions without the restraint of simultaneous test procedures. We should indeed fear the well- intentioned, indiscriminate search for structure more than the deliberate falsification of results, if only for the prevalence of wishful thinking over nefariousness. There are Bonferroni and recent related methods (e.g., Benjamini & Hochberg, 1995) for controlling this problem statistically. Nevertheless, there is an alternative institutional

restraint. Reviewers should require writers to articulate their expectations well enough to reduce the likelihood of post hoc rationalizations. Fishing expeditions are often recognizable by the promiscuity of their explanations. They mix ideas from scattered sources, rely heavily on common sense, and cite fragments rather than trends.

If, on the other hand, a researcher fools us with an intriguing result caught while indiscriminately fishing, we might want to fear this possibility less than we do now. The enforcing of rules to prevent chance results in our journals may at times distract us from noticing the more harmful possibility of publishing bogus theories and methods (illdefined variables, lack of parsimony, experimenter bias, logical errors, artifacts) that are buttressed by evidently impeccable statistics. There are enough good ideas behind fortuitous results to make us wary of restricting them. This is especially true in those areas of psychology where lives and major budgets are not at stake. Let replications promote reputations.

RESULTS AND DISCUSSION

Quantitative and qualitative data :

In advanced studies, a researcher may approach his topics quantitatively, qualitatively or with the use of a mixed methodology. When opting for a qualitative approach, researchers have several options in analyzing the data. The use of matrices, charts, tables and other visual displays are common tools used. With visual displays, the researchers can pare down the often abundant subjective data that has been gathered and determine what will be useful variables in his qualitative data analysis. One way educational researchers work to overcome the challenge of repeatability is to distinguish, in their reports, between repeatable practices and the non repeatable results that emerged from those practices.

Quantitative research can demonstrate rigor by including a wide variety of numerical and statistical data Schroder, K.E., Carey, M.P., Venable, P.A. (2003)7 ., while the rigor of qualitative research is harder to demonstrate because it often involves the qualitative analysis of qualitative data. For example in literary studies, researchers apply interpretive models to texts such as poems or novels. A literary researcher can apply a wide variety of interpretation models and can apply a single interpretive model in multiple ways to a variety of texts. Therefore it is difficult to generate a unifying set of criteria for determining whether thatresearcher's work is truly rigorous. When the researcher is applying qualitative models of analysis to qualitative or numerical data, the research process can be long and tedious because the researcher must carefully pore over the data in detail while crafting the analysis. For example to write a comprehensive historical account, a historian must examine hundreds of primary historical records and secondary historical accounts. Even after spending all his time and energy examining records and accounts, the historian has no guarantee that it covered everything. One way to compensate for the time- consuming problem of qualitative research is to promote qualitative research projects, such as writing historical accounts, as team based or collaborative. After collection of data, the selection of statistical test is more important. To select the right test, two questions arise, What kind of data have you collected ? and what is your goal ? Accordingly you have to select the statistical test.

LIMITATIONS TO QUALITATIVE RESEARCH:

Qualitative Research is a broad term that refers to research methods most commonly used in fields such as Sociology, anthropology, ethnography and other human and social sciences. The strongest objection to qualitative research is that the quality of the research depends too greatly on the individual researcher (Silverman, S., Manson, M. (2003)8 .. Because the researcher designs the type of questions, he or she

can in adherently influence the results due to her own personal beliefs. Because qualitative research is so inextricably entwined with the individual researcher, it is extremely challenging for other researchers to repeat qualitative studies. This makes it hard to confirm or deny the results of the original study. For example, in the field of education, one of the challenges of repeating qualitative study is that different elements of the original study can't be repeated, the teachers and students will all be different, as will the school and classroom environment, the methods of teaching and the styles of learning.

USAGE OF EXCEL:

Excel, the spread sheet program in Microsoft's popular office Software Package is a powerful application used to manage various types of data. Excel's capabilities, however are not limited to data management. The program Data Analysis tool enables users to analyze data using an array of statistical procedures that range from descriptive measures to rigorous inferential statistics, such as regression and analysis of variance (Smeeton, N., Goda, D. (2003) .The data analysis tool is included in all versions of Excel but must be installed by the user.

Fortunately, setting up and using the tool is relatively easy. We can use Data Analysis for Random Number Generation, to test a hypothesis in Excel to Analyze data. Excel's data analysis capabilities make it possible to conduct some advanced analyses of survey data but not others However a program known as XL Stat expands the analytical capabilities of Excel. Tools such as SAS and SPSS are designed with research professionals in mind and make a full range of analytical methods possible.

Choosing between parametric and non parametric tests is sometimes easy. You should definitely choose a parametric test if you are sure that your data are sampled from a population that follows a Gaussian distribution (at least approximately). It is not always easy to decide whether a sample comes from a Gaussian population. If you collect many data points (over a hundred or so) you can look at the distribution of data and it will be fairly obvious whether the distribution is approximately bell shaped. (Thompson, B., Noferi, G. 2002)10 A formal statistical test (Kolmogorov Smirnoff test) can be used to test whether the distribution of the data differs significantly from a Gaussian distribution. But the solution depends on sample size. Parametric tests work well with large samples even if the population is non-Gaussian. In other words, Parametric tests are robust to deviate from Gaussiandistributions as long as the samples are large. Parametric test is suitable when there are at least two dozen data points in each group.

Non-Parametric tests work well with large samples from Gaussian population. The p Values tend to be a bit too large, but the discrepancy is small. Non parametric tests are only slightly less powerful than parametric tests with large samples. P value is inaccurate for small samples and it tends to be too high.

CONCLUSIONS

In this paper, different types of Statistical tools were explained for the purpose of Research and dissertations in psychology field .So one should have the skill of selecting a statistical tool for their research which renders good conclusions. Still some more information can be given for the researchers for their future research.

REFERENCES

- *Abelson, R. P. (1995). Statistics as principled argument. Hillsdale, NJ: Erlbaum.*
- *Abelson, R. P. (1997). On the surprising longevity of flogged horses: Why there is a case for the significance test. Psychological Science, 23, 12-15.*
- *American Psychological Association. (1994). Publication manual of the American Psychological Association (4th ed.). Washington, DC: Author.*
- *Bailar, J. C., & Mosteller, F. (1988). Guidelines for statistical reporting in articles for medical journals: Amplifications and explanations. Annals of Internal Medicine, 108, 266-273.*
- *Baker, B. L. (1969). Symptom treatment and symptom substitution in enuresis. Journal of Abnormal Psychology, 74, 42-49.*
- *Benjamini, Y., & Hochberg, Y. (1995). Controlling the false discovery rate: A practical and powerful approach to multiple testing. Journal of the Royal Statistical Society, 57(Series B), 289-300.*
- *Chambers, J., Cleveland, W., Kleiner, B., & Tukey, P. (1983). Graphical methods for data analysis. Monterey, CA: Wadsworth.*
- *Chartrand, J. M. (1997). National sample survey. Unpublished raw data.*
- *Cleveland, W. S. (1995). Visualizing data. Summit, NJ: Hobart Press.*
- *Cleveland, W. S., & Devlin, S. (1988). Locally weighted regression analysis by local fitting. Journal of the American Statistical Association, 83, 596-640.*
- *Cohen, J. (1969). Statistical power analysis for the behavioral sciences. New York: Academic Press.*
- *Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Hillsdale, NJ: Erlbaum.*
- *Cohen, J. (1994). The earth is round (p < .05). American Psychologist, 49, 997-1003.*
- *Cook, T. D., & Campbell, D. T. (1979). Quasi-experimentation: Design and analysis issues for field settings. Chicago: Rand McNally.*
- *Cronbach, L. J. (1975). Beyond the two disciplines of psychology. American Psychologist, 30, 116-127.*
- *Ehrenberg, A. S. C. (1975). Data reduction: Analyzing and interpreting statistical data. New York: Wiley.*
- *Ehrenberg, A. S. C. (1981). The problem of numeracy. American Statistician, 35, 67- 71.*
- *Feldt, L. S., & Brennan, R. L. (1989). Reliability. In R. L. Linn (Ed.), Educational measurement (3rd ed., pp. 105-146). Washington, DC: American Council on Education.*
- *Fisher, R. A. (1935). The design of experiments. Edinburgh, Scotland: Oliver & Boyd.*
- *Fleiss, J. L. (1994). Measures of effect size for categorical data. In H. Cooper & L. V. Hedges (Eds.), The handbook of research synthesis (pp. 245-260). New York: Sage.*
- *Harlow, L. L., Mulaik, S. A., & Steiger, J. H. (1997). What if there were no significance tests? Hillsdale, NJ: Erlbaum.*
- *Holland, P. W. (1986). Statistics and causal inference. Journal of the American Statistical Association, 81, 945-960.*
- *Holland, P. W., & Rubin, D. B. (1983). On Lord's paradox. In H. Wainer & S. Messick (Eds.), Principals of modern psychological measurement (pp. 3-25). Hillsdale, NJ: Erlbaum.*
- *Hotelling, H., Bartky, W., Deming, W. E., Friedman, M., & Hoel, P. (1948). The teaching of statistics. Annals of Mathematical Statistics, 19, 95-115.*
- *Hurlburt, R. T., & Spiegel, D. K. (1976). Dependence of F ratios sharing a common denominator mean square. American Statistician, 20, 74-78.*
- *Kahn, J. R., & Udry, J. R. (1986). Marital coital frequency: Unnoticed outliers and unspecified interactions lead to erroneous conclusions. American Sociological Review, 51, 734-737.*
- *Keselman, H. J., Huberty, C. J., Lix, L. M., Olejnik, S., Cribbie, R., Donahue, B., Kowalchuk, R. K., Lowman, L. L., Petoskey, M. D., Keselman, J. C., & Levin, J. R. (1998). Statistical practices of educational researchers: An analysis of their ANOVA, MANOVA, and ANCOVA analyses. Review of Educational Research, 68, 350-386.*
- *Kirk, R. E. (1996). Practical significance: A concept whose time has come. Educational and Psychological Measurement, 56, 746-759.*
- *Little, R. J. A., & Rubin, D. B. (1987). Statistical analysis with missing data. New York: Wiley.*
- *McDonald, R. P. (1997). Haldane's lungs: A case study in path analysis. Multivariate Behavioral Research, 32, 1-38.*
- *Messick, S. (1989). Validity. In R. L. Linn (Ed.), Educational measurement (3rd ed., pp. 13-103). Washington, DC: American Council on Education.*
- *Rosenthal, R. (1966). Experimenter effects in behavioral research. New York: Appleton*-Century-Crofts.
- *Rosenthal, R. (1994). Parametric measures of effect size. In H. Cooper & L. V. Hedges (Eds.), The handbook of research synthesis (pp. 231- 244). New York: Sage.*
- *Rosenthal, R., Rosnow, R. L., & Rubin, D. B. (in press). Contrasts and effect sizes in behavioral research: A correlational approach. New York: Cambridge University Press.*

•Rosenthal, R., & Rubin, D. B. (1982). A simple general purpose display of magnitude of experimental effect. Journal of Educational Psychology, 74, 166-169.
•Rosenthal, R., & Rubin, D. B. (1994). The counternull value of an effect size: A new statistic. Psychological Science, 5, 329-334.

Opportunities and Potential at the Bottom of the Pyramid: A Snapshot for Marketers and Researchers

Javed M Shaikh
Ph.D. student, B. K. School of Business Management,
Gujarat University, India

A B S T R A C T

Though the concept BoP- Bottom of the Pyramid was almost two decades old, it's significance in today's times is immense for both business purposes and research works. This study focuses on evolving opportunities and challenges in the growing BoP market. The author tries to channelize thought processes after analysing contemporary literature reviews in this research domain and suggest how dynamic marketing activities could help to grab the potential. The intent of the literature review is to explore diverse and growing BoP fields and prioritize the different subjects to study further for researchers as well as for managerial implications. Relevant literature stimulates marketers to think and set up strategies for the swiftly evolving and expanding BoP market throughout the world. Moreover, the author suggests marketing strategies for gaining access to values, generating values, collaboration & co-creation of values, innovation of values, communication of values and catering values at the last mile.

Keywords: BoP, Bottom of the Pyramid, Consumption, Innovation, Marketing strategies

1. INTRODUCTION

The bottom of the Pyramid (BoP) has been a widespread and robust idea that continue to grow among the Researchers, CEOs, and Managers due to its potential impact on billions of poor people across the globe (Jaiswal, 2008). Prahalad and Hart (2002) were the pioneers of the topic “fortune at the bottom of the Pyramid”. This concept has helped MNCs, NGOs, the Government and National companies in satisfying the needs of poor people profitably. It is crucial to resume the topic detailing with characteristics of the BoP market (Prahalad, 2012). As per this concept, it includes around four billion or more people who have daily income less than $2 (Prahalad & Hart, 2002). People from diverse background are part of this group and this definition of less than $ 2 is changed with time and now it is between $2 to $8 or less than $3000 per annum (Srivastava et al., 2020). Also, all those people who are having insufficient access to food, education, transportation and consumption choice (Mason & Chakrabarti, 2017). Though per capita profit would be less in the BoP segment, the business will be profitable based on the sheer volume it offers to organisations and hence, the attractiveness of the segment is very high (Prahalad & Hart, 2002). This BoP segment's 'go to market' strategyrequires modern four A's, which are essential for both rural and BoP marketing. The four A's are awareness, affordability, accessibility and acceptability. (Prahalad, 2012).

The bottom of the BoP market consists of multiple segments and total market size is around 5 trillion dollars in purchasing power parity (World Resource Institute, 2007). We can deduce that there is huge potential to unearth in this untapped BoP market. This market is served by unorganised sectors and controlled by local monopolies like middlemen and money landers and because of these middlemen, it is an inefficient market. The task for the managers is to convert this market into the organised and private sector market to increase profits from BoP (Prahalad, 2012).

One of the major challenges to serve BoP for instance in India is that 70% poor people of BoP live in the rural area and it is challenging to serve them (Prahalad, 2012) due to accessibility issues. Serving to the bottom of the pyramid is like “working within an innovation sandbox” (Prahalad, 2006). It's like almost working with the constraints and not like removing constraints at the first place and then start working. These constraints will always be there, for example, if we look at the current situation as an analogy, we see that during COVID -19 pandemic, people have started living with many constraints and not ignoring the constraints all together on the first place. Bottom of the pyramid is the market where fate lies with both opportunities and challenges.

It is quite obvious and visible from the immense research work carried out by many researchers immediately after the word “BoP” was coined, which demonstrates that it has been a rewarding research field. Though the literature on the BoP topic is intense and diverse, limited studies have focused on varied fields together for future scope and action. Moreover, the BoP market has huge possibilities for both researchers and marketers to discover their kismet with diverse and untapped areas.

2. LITERATURE REVIEW AND MARKETING STRATEGIES FOR THE BOP MARKETS

2.1. Mobile banking, e-commerce and m-commerce

With growing internet consumption on mobile devices has shifted an e-commerce platform into more of an m-commerce platform. Though the usage of an m-commerce platform on mobiles has been increasing, mobile payment adoption in the crucial segment like the bottom of the pyramid is yet remain untapped. Moreover, research study found that payments' problems were not completely addressed by academicians (Dahlberg et al., 2015). Mass adoption of mobile payment activities at BoP market are crucial for marketers and innovators for the growth of m- commerce businesses (Hussain et al., 2019).

The real question one can ask is, how to create mass adoption of mobile payments? And how will it be useful? Marketing strategies for these questions are, first, suggest how m-payment adoption would be a real gain to the BoP customer through putting more weights on the core benefit of the service(Hussain et al., 2019). For instance, highlight how mobile banking can create convenience as a core benefit compare to physical banking. Second, promotions and offerings to cover untapped market of BoP through tailored communications in local context and culture to avoid negative perceptions of mobile payment adoption (Hussain et al., 2019). Third, build trust, familiarity and user-friendly technology to adopt m-commerce businesses.The BoP customers are facing literacy related problems and hence, it is difficult for them to use services like m-payments effectively and efficiently. Therefore, fourth, marketers can enhance and upgrade their technology usability skills through educational programmes at various BoP places to promote payments services with ease. Sixth, local orientation of BoP opinion leaders would ease mass adoption and create a culture around mobile service usage and payments. Moreover, this culture forms attitudinal and behavioural habits across the market.

Kansal and Chaganti (2018) found out that banking services have huge potential for BoP market, if not tapped it early, banks might cost $1.45 per transaction. However, the BoP market will also gain a maximum from m-commerce transactions as well by adopting mobile payments. With the adoption of mobile banking at BoP, transaction cost will reduce by 86%. Also, banks can serve those customers who are financially excluded and deprived of mobile services in the BoP market. Moreover, collaboration within BoP customers will create culture of learning and sharing among them. In fact, most of the BoP customers are habitual with the physical banking and it is a costly affair for the banks. Therefore, banks have opportunities to make these BoP customers informed about the mobile payments and m-commerce

platforms highlighting the core benefit. Build user network among them which in a way will do positive WOM to untapped BoP customers. Though it is challenging for the BoP customers to adopt and adapt easily, it is a lot rewarding in long term for both the service providers and customers.

2.2. Aspirational Consumption

Need of aspirational consumption do exist in low income strata of both the developing and developed worlds (Srivastava et al., 2020). Furthermore, researchers claim that consumers at the bottom of the pyramid desire to consume those products which are currently consumed by higher middle class and upper class (Srivastava et al., 2020). With rapid population rise, there is an opportunity to capture the need at the bottom of pyramid with respect to aspirational consumption for mobile adoption (Baishya & Samalia, 2020). Marketers are providing services like banking, communications, app based services, entertainments etc. on the mobile platform. Moreover, adoption of mobile services will rise because a smartphone is considered as a aspirational product for BoP customers and therefore, it is likely that consumers will also adopt the services.

Markets at the top and middle level of the pyramid have been saturated and therefore, marketers are looking for the untapped opportunity at the bottom of the pyramid (Baishya & Samalia, 2020). Affordable price of a smart phone to satisfy BoP customers' perceived monetary value along with that it must have user friendly features to create easy to use 'experience' to drive more smartphone adoption and usage (Baishya & Samalia, 2020). Moreover, with the growing adoption of smartphones, there would be a social change in the BoP segments. Further, social desirability as a benefit, customers would buy more smart phones to fulfil the need of social inclusion. Preferably usage of the internet on smart phones rises, providers would further enable better services to BoP customers. These and many more opportunities lie with respect to aspirational consumption at BoP.BoP consumers believe that educations for themselves and for their children would be an aspirational consumption because with education, they can alleviate poverty in the future. Gupta and Srivastav (2016) mentioned in their exploratory paper that education is a big concern for BoP consumers. Their aspiration for their kids is for better education to earn enough money and secure the future.

Based on the study of Srivastava et. al., (2020), there are following factors drive the aspirational consumption at BoP, '1. Aggressive promotions by the marketers, 2. Having desire to look and feel good, 3. Desire for a bright future and well-being, 4. Value for money, 5. Social status in the community and 6. Desire to consume upper segment goods'. These are the six factors marketers can relate in their marketing campaigns of different products and services to satisfy their need of aspirational consumption with reasonable prices and in more innovative ways so that they don't feel vulnerable to marketing gimmicks. Researchers can study the topic aspiration consumption at BoP, as it is at the nascent stage and will grow further.

2.3. Creative Consumption

Consumers at BoP are creative and they use products and services in different ways. As per general understanding, if you want to learn how to survive in life as an individual or business entity then learn from BoP customers because they are master at that. BoP customers can use a product for multipurpose, for example, they use a toothbrush for brushing the teeth, but once it gets outdated; they use it for hair dye. This way they use the product for multi-purposes as well as for optimum use. Jayawickramarathna et. al., (2018) have illustrated with creative consumption with various products and services in their research paper. Researchers have also suggested that financial services would have huge growth if implemented properly in BoP markets (Jayawickramarathna et al., 2018). BoP customers consider

taking a loan as a burden and they do want to repay it faster than urban customers. However, there exist negative perceptions around loan per se because they feel loan is burden and they might not want to begin with it (Jayawickramarathna et al., 2018). Marketers can start with microfinance with more innovative solutions that might help them in the long run. Strategy over here is that how to make the BoP market localised and more organised to reap the benefits in the future. As Prahalad and Hart (2002) proposed that this BoP would become the future middle income group for marketers to target on. Marketers can forecast and invest in this BoP to make it organised and a futureproof middle income segment for their products and services. The vital point is marketers have to understand the evolving needs of the BoP consumers from present to future to ensure profitability and growth of organisations.

2.4. Second hand Products Consumptions

The consumption of second hand products purchasing is quite obvious and prevalent in BoP markets. Major studies on second hand purchasing in urban settings were quite prevalent (Sharma & Nasreen, 2017). However, the research on second hand products at BoP level is on a nascent stage and researchers have opportunities to grab it. Researchers Mukherjee et. al., (2020) have demonstrated motivations for buying second hand products like monetary motivations, aspirational needs of consumers, not interested in buying cheap products, need for social recognition and identity and pester power of the kids. If marketers can use these motivations and customize their offerings to satisfy BoP customers' needs with affordableprices would be a profitable and sustainable business at the larger extent.

2.5. Institutional Voids

With the growing changes like lifestyle, social changes and rising the base of the bottom of the pyramid led MNCs to capture this market (El Ebrashi & Aziz, 2017). However, MNCs are facing difficulties in avoiding Institutional Voids like not finding proper infrastructure for transaction, scarcity of qualified labour and suppliers and other factors as well (El Ebrashi & Aziz, 2017). The goal of the MNCs to create strategies to find out persistent institutional voids and provide solutions to maintain the supply chain and loyal customers from BoP. To make transactions smoother and include customers from the lower income strata segment, MNCs must solve institutional voids. Not only MNCs but all profit, non-profit and public sector together can make an attempt to operationalize these BoP markets (Brix-Asala & Seuring, 2019). There are many such examples like in rural areas or where BoP customer resides, they don't have continuous flow of electricity or availability of internet with poor signal quality and therefore, making transactions online would be challenging for both companies and customers. The main problem is of infrastructure or ecosystem which revolve around the BoP customers' need, wants and demand. It is utmost important for MNCs or PVT companies or governments to improve upon institutional voids to cater to more customers, gain the advantage of volume and satisfy their needs profitably. Moreover, supplier development through co-operation and motivation is a win-win condition for the companies who are targeting BoP customers (Brix- Asala & Seuring, 2019). The strategy supply chain managers would be reducing cost per transaction through creative deliveries of goods by the involvement and development of the suppliers and local collaborators at BoP market. This will enable supplier network or community and collaborator network or community, which in a way enhances firm performance by catering to needs and demands of BoP customers.

2.6. Corporate Social Responsibility and BoP

Gupta (2019) has found that it is profitable opportunity to merge CSR with BoP to alleviate poverty for sustainable development through creation of knowledge, dissemination of the knowledge and capacity building at BoP. This means integration of CSR activities with the BoP market will help both the organisations and customers of BoP. Companies are spending 2% of their net revenue on CSR activities

and that can be converted to develop bottom of the pyramid customers and their wellbeing. The future cashflow from this customer base would be immense if nurtured well. Moreover, just like other customers, BoP customers do have soft corners for the activities of the greater goods followed by the organisations. Which means, consumers of BoP would intend to prefer and buy the products and services of those organisations who do CSR activities. Philanthropic responsibilities, legal responsibilities and ethical responsibilities of the organisations would prompt positive consumer purchase intentions for buying a product or service (Amir et al., 2020). Research study shows that MNCs' CSR activities would generate authenticity among BoP consumers, which in a way drives positive attitude and WOM about both the company and its product portfolio (Randrianasolo, 2018).

2.7. Grassroot Innovations

Grassroots innovators disseminate innovation from bottom to top to create value system by co- creation (Saxena, 2017). Grassroots innovators develop a product in the field for the people who are working in the field and later, same products will be further developed for the middle and the top levels of the pyramid for business sustainability and growth. The development of the grassroots innovators who can develop new products through utilising BoP people's skills and their free times through formulating management of business strategy and social value (Sarkar, 2018). Bottom of the pyramid is the new source of radical innovations. Immersing in the lives of BoP consumers, generate consumer insights and develop prototype, take a test market of the product and mass commercialisation at BoP markets (Prahalad, 2012). Prahalad (2012) has given the best example of biogas used by the BoP customers in the rural area and how researchers have developed the innovative gas stove product in two years by generating consumer insights after immersing in their lives. BoP market should be considered as the source of generating new ideas, new products and services instead of looking narrowly as only a consumption market (Hilmi, 2012). Necessity is the mother of invention and innovation saying comes true when we see how BoP consumers create new ideas, products and services through the concept of grassroot innovation. Innovation is not possession of only large corporations and laboratories, but it can also be a source from the bottom of the pyramid market (Hilmi, 2012). There are challenges for BoP market to innovate and sustain their ideas. However, there are many new ideas that could cut through the bottom, middle and top level of the pyramid for commercialization in both developed and developing countries. One such example is a GE ECG machine developed in emerging countries and commercialized in both emerging and developed countries1. This example of reverse innovation is not exactly fitting for BoP market innovation, but the core idea is to understand that this can be done in BoP settings too.

2.8. Social Innovations

Co-creating values or opportunities with social enterprises to gain social and economic value through creating partnership with top and bottom of the pyramid exploiting supply side, and demand side markets (De Silva et al., 2019). For targeting BoP to connect social ties and emotional bonding are so important to create value among them. Creating customer value through bricolage resources for innovative products with the help of social and government ties along with that marketing capabilities must be utilised to enhance customer value further (Getnet et al., 2019).

2.9. Manufacturing and Supply Chain

Bulk of the BoP populations underserved as far as healthcare sector is concerned (WHO, 2011; Perry & Malkin, 2011). Therefore, customised medical or healthcare instruments or machines at smaller quantities will create opportunities for manufacturers to serve the BoP markets well. It requires supply chain management approach to reduce the cost of the transaction and equipment and then cater to the

different needs of the BoP market (Ahrens et al., 2019). It is important to ask a question that how supply chain management can fulfil needs of the BoP

1 https://www.uni-potsdam.de/fileadmin/projects/professional-services/downloads/skripte-ss/GE-Healthcare-EM.pdfmarket with profits? More opportunities can be created by the way of making healthcare equipments available to the BoP patients. Moreover, it will improve the healthcare outcomes (Ahrens et al., 2019). Further, how operation can be cost effective and economically viable through evolving business models to serve to the bottom of the pyramid market? (Sodhi et al., 2016). The answer to this question is, It's all about value creation, value delivering and value sharing at the BoP market (Sodhi et al., 2016). Social entrepreneurs provide opportunities to BoP customers by the way of involving them in the supply chain network (Sodhi et al., 2016). In nutshell, it is crucial to reduce the transaction cost through better supply chain management, which in a way built through and from the BoP market so that companies can co-create with Bop customers. Co-creation will help both the company and the customers in value assessment, value creation, value communication and value delivery. Co-creation helps firms in need identification, better planning and allocation of resources, reducing the cost of manufacturing, improvement in performance and productivity, speedy delivery of value through lean supply chain management, and of course higher profits through huge volumes. Similarly, co-creation helps customers in satisfying their core needs, wants and aspirations by getting affordable, accessible and long lasting values.

2.10. Proximity and MSMEs

Proximity is an essential connection between market actors and BoP consumers (Mason & Chakrabarti, 2017). The nearer you are with the customers, the better you serve them with cost effectiveness through more of sustainable business. Resource mobilisations to create a network and efficient supply chain management will help in exploiting the BoP market opportunities with lesser cost due to proximity (Mason & Chakrabarti, 2017).

Moreover, understanding the consumer's hybrid behaviour is important like consumers purchase local brand than top leading brand in the BoP market (Borchardt et al., 2018). There is a huge role played by MSMEs in delivering various products to the customers at this base of BoP, and therefore, it has created opportunities of varieties for BoP. Local producers fill the gap of other niche brands which a leading brand cannot provide. MSMEs role in creating partnership with dealers and making products available to BoP consumers utilizing local network is an opportunity for suppliers (Borchardt et al., 2018).

2.11 International marketing strategies for brand

Organisations have enormous opportunities to grab massive profits if they can sell at the global BoP level through creating brand equity at international level. Moreover, we also know that there is no much difference in consumer behaviour at the BoP level internationally (Nagy et al., 2019). If we look at the marketing strategy point view it is a 'Volume' strategy that will work in international marketing. Selling to BoP at international level in itself is a huge customer base of 2bn people to target on even if the consumers are poor and not buying quite often (Nagy et al., 2019). Moreover, push strategies will help creating more penetration and that in a way will drive brand progress (Nagy et al., 2019). Resource based organisations can thrive huge market by selling brands at BoP level in the international market. However, they have to tailor their offering considering other factors like culture, language, econo-political situations etc. of different countries. For organisations having less resources, they have to innovate their marketing strategies based on more hyper local approach in international market to capture thebase. Moreover, such organisations go international by identifying the high similar context

countries of the national company to medium similarity level and to low similarity level in respective order to tap the market.

3. METHODOLOGY

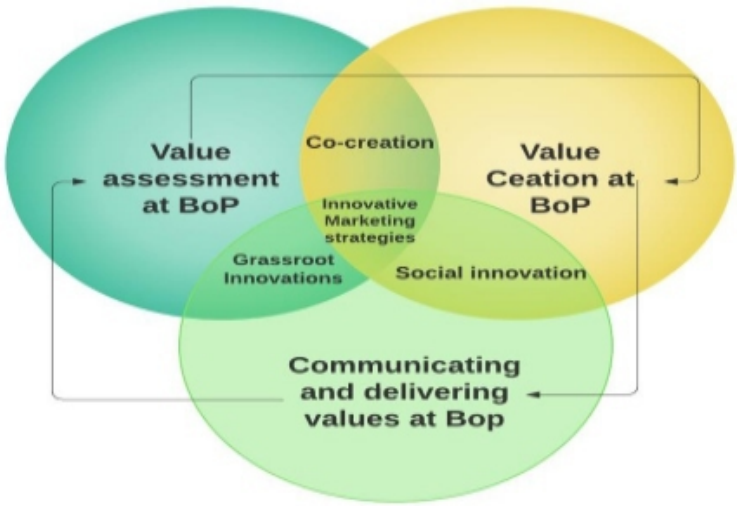
For the current literature review we have collected major papers from last 5 years and few BoP seminal papers from various data sources like Google Scholar, Emerald and Taylor & Frances etc. The author has gone through almost 23 most recent papers and 6 seminal papers for this research study. From these papers author has identified few lucrative areas for research, strategies and for a research theme. The purpose of this literature is to look into current development in diverse areas within BoP markets and suggest marketing strategies for evolving customers' needs, wants, demands and aspirations. The author has identified few lucrative areas where research work has just started growing at an increasing speed. Findings from contemporary literature would be utilized for the marketers to tailor their marketing campaign for segmenting, targeting and positioning of products and services at BoP.

Figure 1. The conceptual understanding of the BoP ecosystem based on current literature The Conceptual Figure.

The figure 1. Illustrates the BoP ecosystem, where both supply side factors and demand side factors must be match to enhance the performance of the ecosystem. The increased performance results into satisfied and happy BoP customers. The growing, a faster and a better global ecosystem would meet customers' needs, wants and aspirations as well as brings more profits to firms operating in the BoP market.

Figure 2. The conceptual Venn diagram . It is to understand marketing strategies for value assessment, creation, collaborations, communications and delivering at BoP. The above ecosystem creates values among the stakeholders. These values are being collected through co- creation, grassroot innovations, social innovations and collaborations among BoP stakeholders. These values are created together and consumed together at local and international level. The benefits of these values are in terms of a

reduction in cost of goods and productions, better innovative products and services, value for money to BoP customers, fulfilling aspirations or luxuries in affordable prices, physical and mental and overall well-being of BoP customers. These values are prevailing at the BoP market and the only way these values are brought out and narture through better and efficient ecosystems.



4. Limitations

Few contemporary research articles and few seminal papers (a total 30 papers) were used in this study which focus only on recent development in the field of BoP for both researchers and managers. The research study has not followed systematic literature review approach, and it is not in-depth and exhaustive. Author has used his own knowledge and thought processes at various places to come up with various evolving marketing strategies for BoP, which might not be generalizable across different BoP markets and need to validate. The purpose of this study is to get conversant with diverse areas as far as BoP markets are concerned and provide the basic understanding of the field per se for novice researchers and academicians. Hence, it is not detailed study on a particular topic.

5. Implications for managers and researchers

Though this research study has limitations, it has few advantages for managers and researchers. Marketing strategies suggested in this paper are based on the thorough understanding of the literature from 30 odd papers. Managers can use those strategies with contextual modifications. Managers can go through the diverse areas discussed in the paper to understand the wholistic idea of the BoP concept and ecosystem. Researchers also can start looking in-depth if they find some of the topics for their interest and pursue it further with systematic literature review. Managers should start with strategies for segmenting, targeting and positioning of BoP consumers based on 360 degree view of the BoP ecosystem, which is conceptualized in the above diagram. The Venn diagram suggests how strategies for innovations are interconnected with co-creation, grassroot innovation and social innovation.

REFERENCES:

1. *Ahrens, F., Dobrzykowski, D., & Sawaya, W. (2019). Addressing mass-customization trade- offs in bottom of the pyramid markets. International Journal of Physical Distribution & Logistics Management pg. 451 -471.*
2. *Amir, R. M., Mannan, M., & Nasiruddin, M. (2020). Influence of corporate social responsibility on bottom of the pyramid consumers' purchase intention. International Journal of Business Innovation and Research, 21(2), 259-270.*
3. *Baishya, K., & Samalia, H. V. (2020). Extending unified theory of acceptance and use of technology with perceived monetary value for smartphone adoption at the bottom of the pyramid. International Journal of Information Management, 51, 102036.*

4. *Borchardt, M., Pereira, G., Viegas, C., Reolon, D., Xavier, Y., & Battaglia, D. (2018). Providing goods to the base of the pyramid: Opportunities for micro, small and medium-sized local producers. Journal of Small Business Strategy, 28(2), 80-89.*
5. *Brix-Asala, C., & Seuring, S. (2019). Bridging institutional voids via supplier development in base of the pyramid supply chains. Production Planning & Control, pg.1-17.*
6. *De Silva, M., Khan, Z., Vorley, T., & Zeng, J. (2019). Transcending the pyramid: opportunity co-creation for social innovation. Industrial Marketing Management. Pg.1-45.*
7. *Dahlberg, T., Guo, J., & Ondrus, J. (2015). A critical review of mobile payment research. Electronic Commerce Research and Applications, 14(5), 265-284.*
8. *El Ebrashi, R., & Aziz, H. H. A. (2017). Strategies for tackling institutional voids at the bottom of the pyramid in Egypt. African Journal of Business and Economic Research, 12(2-3), 43-89.*
9. *Getnet, H., O'Cass, A., Ahmadi, H., & Siahtiri, V. (2019). Supporting product innovativeness and customer value at the bottom of the pyramid through context-specific capabilities and social ties. Industrial Marketing Management, 83, 70-80.*
10. *Gupta, A. D. (2019). Some Recent Cases in the Bottom of the Pyramid Concept: Lessons from India. Global Business Review, 0972150919829279.*
11. *Gupta, S., & Srivastav, P. (2016). An exploratory investigation of aspirational consumption at the bottom of the pyramid. Journal of International Consumer Marketing, 28(1), 2-15.*
12. *Hilmi, M. F. (2012). Grassroots Innovation from the Bottom of the Pyramid. Current opinion in creativity, innovation and entrepreneurship, 1(2).*
13. *Hussain, M., Mollik, A. T., Johns, R., & Rahman, M. S. (2019). M-payment adoption for bottom of pyramid segment: an empirical investigation. International Journal of Bank Marketing.p.g.362 – 381.*
14. *Jaiswal, A. K. (2008). The fortune at the bottom or the middle of the pyramid?. Innovations: Technology, Governance, Globalization, 3(1), 85-100.*
15. *Jayawickramarathna, W., Rahman, K., Mulye, R., & Fry, T. (2018). Profitability in Rural Bottom of the Pyramid (BoP) Markets from a Business Perspective: Evidence from Sri Lanka. In Bottom of the Pyramid Marketing: Making, Shaping and Developing BOP Markets. Emerald Publishing Limited.*
16. *Kansal, P., & Chaganti, V. K. (2018). Mobile Banking at the Bottom of Pyramid: Risk Perceptions and Opportunities. International Journal of Business Insights & Transformation, 11(2), pg. 45 -55.*
17. *Mason, K., & Chakrabarti, R. (2017). The role of proximity in business model design: Making business models work for those at the bottom of the pyramid. Industrial Marketing Management, 61, 67-80.*
18. *Mukherjee, S., Datta, B., & Paul, J. (2020). The phenomenon of purchasing second-hand products by the BOP consumers. Journal of Retailing and Consumer Services, 57, 102189.*
19. *Nagy, M., Bennett, D., & Graham, C. (2019). Why include the BOP in your international marketing strategy. International Marketing Review.pg. 74 -97.*
20. *Perry, L., & Malkin, R. (2011). Effectiveness of medical equipment donations to improve health systems: how much medical equipment is broken in the developing world?.pg.719 – 722.*
21. *Prahalad, C. K. (2006). The innovation sandbox. Strategy and Business, 44, 62.*
22. *Prahalad, C. K. (2012). Bottom of the Pyramid as a Source of Breakthrough Innovations. Journal of product innovation management, 29(1), 6-12.*
23. *Prahalad, C. K., & Hart, S. L. (2002). The Fortune at the Bottom of the Pyramid. Strategy+ Business, 26(2002), 54-67.*
24. *Randrianasolo, A. A. (2018). Organizational legitimacy, corporate social responsibility, and bottom of the pyramid consumers. Journal of International Consumer Marketing, 30(3), 206- 218.*
25. *Sarkar, S. (2018). Grassroots entrepreneurs and social change at the bottom of the pyramid: the role of bricolage. Entrepreneurship & Regional Development, 30(3-4), 421-449.*
26. *Saxena, S. (2017). Harnessing the Potential of the Grassroots Innovators: Inversion of the Bottom of the Pyramid. Available at SSRN 2975644.*
27. *Sharma, Y., & Nasreen, R. (2017). Perceived Consumer-Centric Marketing-Mix at the Urban Bottom of the Pyramid-An empirical study of Food market. Journal of Research in Business and Management. Quest Journal, 5(4), 94-107.*
28. *Sodhi, M. S., & Tang, C. S. (2016). Supply chain opportunities at the bottom of the pyramid. Decision, 43(2), 125-134.*
29. *Srivastava, A., Mukherjee, S., & Jebarajakirthy, C. (2020). Aspirational consumption at the bottom of pyramid: A review of literature and future research directions. Journal of Business Research, 110, 246-259.*
30. *World Health Organization. (2011). Medical device donations: considerations for solicitation and provision.*
31. *World Resources Institute. 2007. The next 4 billion. Washington, DC: World Resources Institute.*

Is Bitcoin's Prices Affecting Key Foreign Exchange Rate? A Statistical Research on Bitcoin and USD and Euro.

Mr. Ala'aldin Shuaib Manaserh
MBA. Istanbul Aydin University, Turkey Alaadeen.m@outlook.com,
ORCID: 0000-0003-0867-8513

A B S T R A C T

Bitcoin is becoming more important. Cryptocurrency world need more and more studies. While they are taking a good interest all over the world, and as the economic and financial system need more and more improvement by the time. This study tries to clarify and conduct an analysis to reveal the interaction between Bitcoin and key Exchange rate (USD & Euro) to find out whether Bitcoin's prices fluctuation can affect the key foreign exchange rates. This study used unit root test, VAR analysis and Granger Causality. The result of this study showed that USD prices can cause the movement of the Bitcoin prices, while the Bitcoin prices cannot cause the movement of USD prices. More so, it showed that the Euro prices can cause the movement of Bitcoin while Bitcoin prices cannot cause the movement of Bitcoin prices.

KEYWORDS: Bitcoin, USD, EURO, CRYPTOCURRENCY, FOREIGHN EXCHANGE RATE.

1. INTRODUCTION

Bitcoin is an independent digital currency, not subject to the control of central authorities and without inflation. It is belt on a peer to peer network which is called Blockchain. This system has been founded by a computer scientist known under the alias Satoshi Nakamoto in 2009 and his real name is still unknown. Bitcoin relies on cryptography and on a consensus protocol for the network instead of traditional banking transactions. Bitcoin and cryptocurrencies in general have many advantages like that they transfer the funds more easily between two parties in the transaction, and these transfers done with minimal processing costs. While Fiat currencies transfers are done with a need to intermediates (banks or financial Institutions) with some complications and large fees charged for those banks. (Salman & Abdul Razzaq, August 2019) Bitcoin's Importance nowadays in a lot of area. Some of these areas it's price movement or fluctuations, and it is disturbing conventional payment methods and ultimately has affected all financial systems. (Ozyesil, 2019)

1.1 Purpose of Research

This study conducts an analysis to reveal the interaction between Bitcoin and Exchange Rates to find out whether Bitcoin is becoming a substitution for the exchange rates

2. LITERATURE REVIEW

According to (Ozyesil, 2019) while he did a study to expose the interaction between Bitcoin and Exchange Rates of USD and EURO to find out whether Bitcoin is becoming a substitution for these exchange rates. He Found that Bitcoin and Exchange Rates of USD and EURO have not become an alternative tool for each other yet. In more explanation he founded that USD prices not significantly affected Bitcoin and Euro prices, while he founded that USD exchange rate was found to be significantly sensitive to the Euro. He used daily data between 27.10.2017-25.02.2019. and He used Unit root test, VAR Analysis, and Variance Decomposition method for his study.

(Li & Wang , 2016) conducted an empirical theory-driven analysis of the determination of the Bitcoin exchange rate (against USD), Bitcoin's exchange rate, according to their report, is responding to shifts in economic dynamics and business conditions in the short term. In the long term and after Mt. Gox (one of the largest Bitcoin exchange markets) closed, they found that Bitcoin exchange rate becomes more responsive to economic conditions and less prone to technology factor.

3. RESEARCH METHODOLOGY

To investigate the mutually interaction between the exchange rates and the Bitcoin, the interaction (relationship) between monthly closing price of both exchange rates and Bitcoin was analyzed through the Var model. Thus, it was tried to show the sensitivity of the values of Bitcoin to the changes occurred in the exchange rates.

In this study as cryptocurrency Bitcoin and as exchange rates USD and EUR were used. The study was carried out with monthly data for the period between 08.2010 - 06.2020.

In this study, the stationary of the series was analyzed with ADF (Augmented Dickey Fuller) unit root test. Interactions between the series were analyzed by the Impulse- Response Function and Variance Decomposition methods based on the VAR (Vector Autoregressive) method.

4. ANALYSIS AND DISCUSSION

4.1 Unit Root Test

Table 1: ADF Unit Root at Level

Variable	ADF Test Statistic	95% Critical ADF Value	
BTCP	-1.04423	-2.886074	Non-Stationary
USDP	0.89451	-2.886074	Non-Stationary
EURP	0.730046	-2.886074	Non-Stationary

Source: Author's Computation.

The report of the ADF unit root at level reveals that bitcoin price (BTCP) has the ADF stat of - 1.044230 with the critical value of -2.886074, the USD price (USDP) has the ADF stat value of 0.894510 with critical value of -2.886074, the euro price (EURP) reveals the ADF value of 0.730046with critical value of -2.886074. This indicates that all the variables are not stationary at level.

Table 2: ADF Unit Root at First Difference

Variable	ADF Test Statistic	95% Critical ADF Value	
BTCP	-10.74264	-2.88629	Stationary
USDP	-10.16042	-2.88629	Stationary
EURP	-10.62931	-2.88629	Stationary

Source: Author's Computation

Table 3 reported the ADF unit root at first difference and reveals that bitcoin price (BTCP) has the ADF stat of -10.74264 with the critical value of -2.886290, the USD price (USDP) has the ADF stat value of

10.16042 with critical value of -2.886290, the euro price (EURP) reveals the ADF value of -10.62931 with critical value of -2.886290. This indicates that all the variables become stationary at first difference.

Table 3: Integration Order

Variable	Integration Order
BTCP	I(1)
USDP	I(1)
EURP	I(1)

Source: Author's Computation

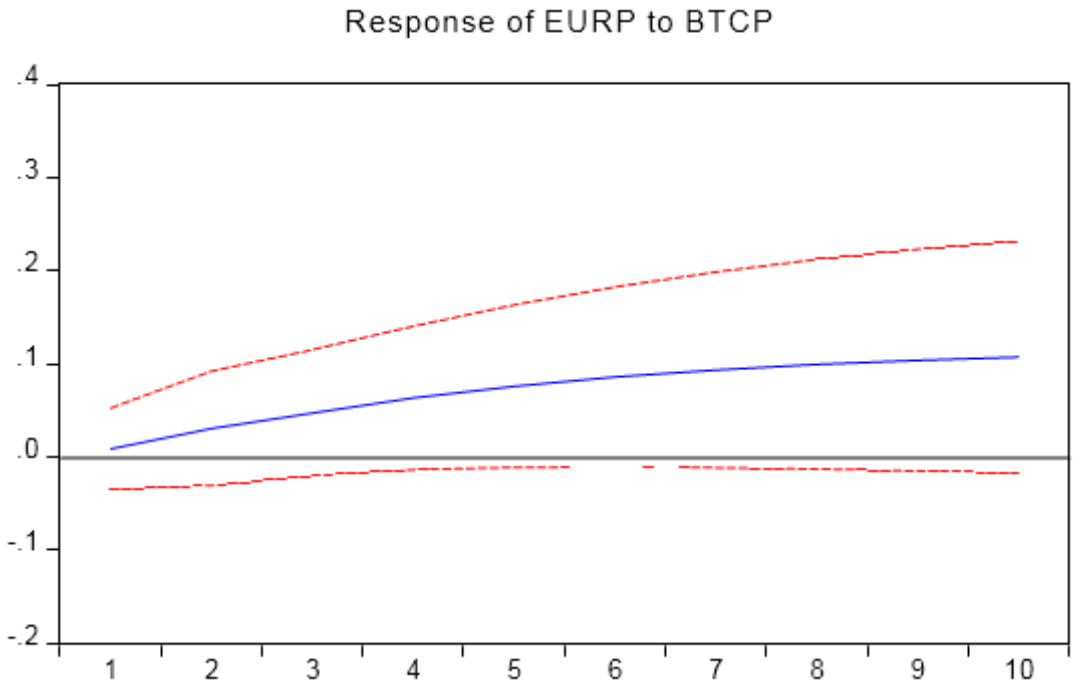
The above table shows the integration order of the unit root report and its revealed that all the variables became stationary at order 1.

4.2 VAR Analysis

Table 10: Report of VAR

Standard errors in ( ) & t-statistics in [ ]			
	BTCP	USDP	EURP
BTCP(-1)	0.918897	1.09E-05	2.51E-05
	-0.0927	-2.00E-05	-2.30E-05
	[9.91292]	[0.55112]	[1.10503]
BTCP(-2)	-0.073745	7.05E-06	4.84E-07
	-0.09386	-2.00E-05	-2.30E-05
	[-0.78569]	[0.35194]	[0.02105]
USDP(-1)	-2614.075	1.3558	0.515396
	-1447.8	-0.30904	-0.35449
	[-1.80555]	[4.38709]	[1.45391]
USDP(-2)	2574.199	-0.301147	-0.35942
	-1424.95	-0.30417	-0.3489
	[1.80652]	[-0.99008]	[-1.03017]
EURP(-1)	3185.164	-0.295726	0.545528
	-1264.96	-0.27001	-0.30972
	[2.51799]	[-1.09522]	[1.76134]
EURP(-2)	-2840.172	0.217903	0.265121
	-1235.58	-0.26374	-0.30253
	[-2.29865]	[0.82619]	[0.87635]
C	-727.6955	0.117161	0.19639
	-454.758	-0.09707	-0.11135
	[-1.60018]	[1.20696]	[1.76378]
R-squared	0.931128	0.983558	0.980058
Adj. R-squared	0.927371	0.982661	0.97897
Akaike AIC	16.64067	-0.263483	0.010919

Figure 3: BTCP Impulse Response



The response of EURP to BTCP oscillated from positively significant from the beginning of quarter 1 and till experiencing an upward moving direction during the study period.

4.2.2 Variance Decomposition

4.2.2.1BTCP=f(USDP, EURP)

Table 11: Variance Decomposition of BTCP

Variance Decomposition of BTCP:				
Period	**S.E.**	**BTCP**	**USDP**	**EURP**
1	965.2767	100	0	0
2	1355.623	95.39053	1.7145	2.89497
3	1606.755	93.34551	3.223472	3.43102
4	1782.126	91.6437	4.759524	3.59678
5	1913.499	90.06392	6.348703	3.58738
6	2017.42	88.48763	8.007931	3.50444
7	2103.392	86.8841	9.728933	3.38697
8	2177.243	85.24873	11.49632	3.25495
9	2242.717	83.58793	13.29281	3.11926
10	2302.299	81.91186	15.10199	2.98614

Source: Author's Computation

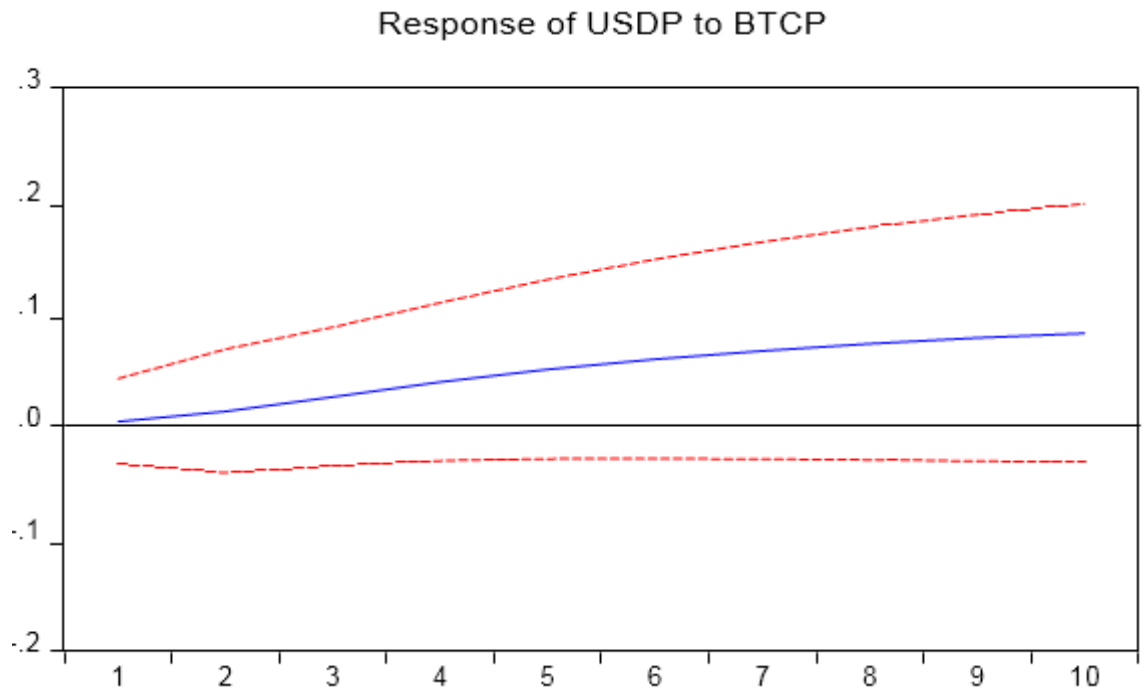
The table above shows the variation from one variable to the other. In the short-run period 2, aside the own shock (BTCP shock) which has the value of 95.39053, EURP has the highest value of 2.894974 followed by USDP with the value of 1.714500. However, in the long-run period 9, aside the own shock, USDP has the highest variation value of 13.29281, indicating that EURP has the higher variation in the short-run while USDP has the higher variation to BTCP in long- run.

Schwarz SC	16.80593	-0.098224	0.176178
Mean dependent	2539.081	3.202028	3.777885
S.D. dependent	3581.773	1.564762	1.629785
Determinant resid covariance (dof adj.)		207.384	
Determinant resid covariance		172.3438	
Log likelihood		-799.2927	
Akaike information criterion		14.0221	
Schwarz criterion		14.51787	

Source: Author's Computation

The VAR analysis presented in the above table shows the two lags moving variation against each other. The standard errors and the t-statistics were presented and revealed that the standard errors were not significant to one another.

4.2.1 Impulse Response Function Figure 2: BTCP Impulse Response



Source: Author's Design

The responses of USDP to BTCP at the beginning of quarter 1 oscillated from a positive direction and move significantly at the early stage of quarter 2 to quarter 10. This implies that the response of USDP to BTCP has been moving positively significant from 2010M08 to 2020M06.

4.2.2.2USDP=f(BTCP, EURP)

Table 12: Variance Decomposition of USDP

Variance Decomposition of USDP:				
Period	**S.E.**	**BTCP**	**USDP**	**EURP**
1	0.206045	0.025466	99.97453	0
2	0.297266	0.18624	99.29478	0.51898
3	0.365402	0.604341	98.67564	0.72002
4	0.422557	1.282293	97.9042	0.81351
5	0.473338	2.119921	97.02354	0.85654
6	0.519896	3.034259	96.08768	0.87807
7	0.563419	3.96684	95.14314	0.89002
8	0.604632	4.880191	94.22182	0.89799
9	0.644015	5.751744	93.34357	0.90469
10	0.681903	6.569131	92.51943	0.91144

Source: Author's Computation

Aside the impulse of USDP in the short-run period 3, EURP has the highest variation value of 0.720020, followed by BTCP with the value of 0.604341 while in the long-run period 10, BTCP has the highest impulse to USDP with the value of 6.569131 followed by EURP with the variation value of 0.911442. This implies that BTCP could influence USDP in the long-run while EURP influence in the short-run.

4.2.2.3EURP=f(BTCP, USDP)

Table 13: Variance Decomposition of EURP

Variance Decomposition of EURP:				
Period	**S.E.**	**BTCP**	**USDP**	**EURP**
1	0.236345	0.136691	90.47548	9.38783
2	0.332745	0.918596	92.93562	6.14578
3	0.405765	1.985398	93.11641	4.89819
4	0.467183	3.338697	92.53148	4.12982
5	0.521838	4.799093	91.62391	3.57699
6	0.571917	6.254277	90.60503	3.14069
7	0.618632	7.635945	89.58307	2.78098
8	0.662728	8.90862	88.61348	2.4779
9	0.704704	10.05731	87.72275	2.21993
10	0.744919	11.07953	86.92097	1.9995

Source: Author's Computation

In the short-run period 2, USDP has the highest variation of 92.93562 followed by the own shock (EURP) with the value of 6.145784 and BTCP with the value of 0.918596. In the long-run period 9, USDP has the highest variation of 87.72275, followed by BTCP and EURP indicating that USDP has the highest variation in the short-run and in the long-run to EURP.

4.3 Granger Causality

Table 14: Pairwise Granger Causality Tests

Sample: 2010M08 2020M06			
Lags: 2			
Null Hypothesis:	**Obs**	**F-Statistic**	**Prob.**
USDP does not Granger Cause BTCP	117	4.49436	0.0133
BTCP does not Granger Cause USDP		0.91903	0.4019
EURP does not Granger Cause BTCP	117	6.07692	0.0031
BTCP does not Granger Cause EURP		1.28351	0.2811
EURP does not Granger Cause USDP	117	0.38286	0.6828
USDP does not Granger Cause EURP		0.70408	0.4967

Source: Author's Computation

The report of granger causality test presented in Table 14 shows that USDP to BTCP has the F-stat value of 4.49436 with p-value 0.0133 while BTCP to USDP has the F-stat value of 0.91903 with p-value of 0.4019, indicating that the null hypothesis that USDP does not granger cause BTCP is rejected that is USDP can cause the movement of BTCP though BTCP cannot cause the movement of USDP. More so, EURP to BTCP has the F-stat value of 6.07692 with p-value of 0.0031 while BTCP to EURP has the F-stat value of 1.28351 with p-value of 0.2811, implying that EURP can granger BTCP though BTCP cannot granger cause EURP. Furthermore, the granger causality result between EURP and USDP reveal that there is no causality between EURP and USDP because the p-values are more than 5% alpha level.

5. FINDINGS AND CONCLUSIONS

In this study, the interaction between the closing prices of the Bitcoin and the closing values of the exchange rates (USD and EUR) was analyzed using the monthly data for the period between August 2010 to June 2020 period which in total 120 months.

The Unit root test showed that the all the variables become stationary at first difference. While Granger Causality test showed that USD prices can cause the movement of the Bitcoin prices, while the Bitcoin prices cannot cause the movement of USD prices. More so, it showed that the Euro prices can cause the movement of Bitcoin while Bitcoin prices cannot cause the movement of Bitcoin prices. Furthermore, the granger causality result between EURP and USDP reveal that there is no causality between EURP and USDP because the p-values are more than 5% alpha level.

Based on the findings obtained from this study, it can be understood that there are some significant interactions between Bitcoin, USD and EUR. The result may be beneficial for investors to consider diversification their portfolios.

REFERENCES

1. *Li, X., & Wang , C. A. (2016). The technology and economic determinants of cryptocurrency exchange rates: The case of Bitcoin. Decision Support Systems journal, 49-60.*
2. *Ozyesil, M. (2019). A research on interaction between bitcion and foreign exchange rates. Journal of Economics, Finance and Accounting, 6(1), 55-62. Retrieved from http://doi.org/10.17261/Pressacademia.2019. 1028*
3. *Salman, A., & Abdul Razzaq, M. G. (August 2019). Blockchain and Cryptocurrencies. London: IntechOpen. Retrieved from https://www.researchgate.net/publication/335491738*

Instructions for Authors

Essentials for Publishing in this Journal

1 Submitted articles should not have been previously published or be currently under consideration for publication elsewhere.

2 Conference papers may only be submitted if the paper has been completely re-written (taken to mean more than 50%) and the author has cleared any necessary permission with the copyright owner if it has been previously copyrighted.

3 All our articles are refereed through a double-blind process.

4 All authors must declare they have read and agreed to the content of the submitted article and must sign a declaration correspond to the originality of the article.

Submission Process

All articles for this journal must be submitted using our online submissions system. http://enrichedpub.com/ . Please use the Submit Your Article link in the Author Service area.

Manuscript Guidelines

The instructions to authors about the article preparation for publication in the Manuscripts are submitted online, through the e-Ur (Electronic editing) system, developed by **Enriched Publications Pvt. Ltd**. The article should contain the abstract with keywords, introduction, body, conclusion, references and the summary in English language (without heading and subheading enumeration). The article length should not exceed 16 pages of A4 paper format.

Title

The title should be informative. It is in both Journal's and author's best interest to use terms suitable. For indexing and word search. If there are no such terms in the title, the author is strongly advised to add a subtitle. The title should be given in English as well. The titles precede the abstract and the summary in an appropriate language.

Letterhead Title

The letterhead title is given at a top of each page for easier identification of article copies in an Electronic form in particular. It contains the author's surname and first name initial .article title, journal title and collation (year, volume, and issue, first and last page). The journal and article titles can be given in a shortened form.

Author's Name

Full name(s) of author(s) should be used. It is advisable to give the middle initial. Names are given in their original form.

Contact Details

The postal address or the e-mail address of the author (usually of the first one if there are more Authors) is given in the footnote at the bottom of the first page.

Type of Articles

Classification of articles is a duty of the editorial staff and is of special importance. Referees and the members of the editorial staff, or section editors, can propose a category, but the editor-in-chief has the sole responsibility for their classification. Journal articles are classified as follows:

Scientific articles:

1. Original scientific paper (giving the previously unpublished results of the author's own research based on management methods).

2. Survey paper (giving an original, detailed and critical view of a research problem or an area to which the author has made a contribution visible through his self-citation);

3. Short or preliminary communication (original management paper of full format but of a smaller extent or of a preliminary character);

4. Scientific critique or forum (discussion on a particular scientific topic, based exclusively on management argumentation) and commentaries. Exceptionally, in particular areas, a scientific paper in the Journal can be in a form of a monograph or a critical edition of scientific data (historical, archival, lexicographic, bibliographic, data survey, etc.) which were unknown or hardly accessible for scientific research.

Professional articles:

1. Professional paper (contribution offering experience useful for improvement of professional practice but not necessarily based on scientific methods);
2. Informative contribution (editorial, commentary, etc.);
3. Review (of a book, software, case study, scientific event, etc.)

Language

The article should be in English. The grammar and style of the article should be of good quality. The systematized text should be without abbreviations (except standard ones). All measurements must be in SI units. The sequence of formulae is denoted in Arabic numerals in parentheses on the right-hand side.

Abstract and Summary

An abstract is a concise informative presentation of the article content for fast and accurate Evaluation of its relevance. It is both in the Editorial Office's and the author's best interest for an abstract to contain terms often used for indexing and article search. The abstract describes the purpose of the study and the methods, outlines the findings and state the conclusions. A 100- to 250-Word abstract should be placed between the title and the keywords with the body text to follow. Besides an abstract are advised to have a summary in English, at the end of the article, after the Reference list. The summary should be structured and long up to 1/10 of the article length (it is more extensive than the abstract).

Keywords

Keywords are terms or phrases showing adequately the article content for indexing and search purposes. They should be allocated heaving in mind widely accepted international sources (index, dictionary or thesaurus), such as the Web of Science keyword list for science in general. The higher their usage frequency is the better. Up to 10 keywords immediately follow the abstract and the summary, in respective languages.

Acknowledgements

The name and the number of the project or programmed within which the article was realized is given in a separate note at the bottom of the first page together with the name of the institution which financially supported the project or programmed.

Tables and Illustrations

All the captions should be in the original language as well as in English, together with the texts in illustrations if possible. Tables are typed in the same style as the text and are denoted by numerals at the top. Photographs and drawings, placed appropriately in the text, should be clear, precise and suitable for reproduction. Drawings should be created in Word or Corel.

Citation in the Text

Citation in the text must be uniform. When citing references in the text, use the reference number set in square brackets from the Reference list at the end of the article.

Footnotes

Footnotes are given at the bottom of the page with the text they refer to. They can contain less relevant details, additional explanations or used sources (e.g. scientific material, manuals). They cannot replace the cited literature.
The article should be accompanied with a cover letter with the information about the author(s): surname, middle initial, first name, and citizen personal number, rank, title, e-mail address, and affiliation address, home address including municipality, phone number in the office and at home (or a mobile phone number). The cover letter should state the type of the article and tell which illustrations are original and which are not.