<table>
<thead>
<tr>
<th>Name</th>
<th>Title/Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. John D. Theodore</td>
<td>American Military University, JDT Management Consultants, President.</td>
</tr>
<tr>
<td></td>
<td>MBA, Business Economy, University of South Africa, Ph.D. Aristotelian University, Business Administration, Ph.D. Administration, University of Kansas, USA</td>
</tr>
<tr>
<td>Prof. Moji Moatamedi</td>
<td>Honorary Vice Chair, Ph.D., at The University of Sheffield, MBA, Manchester Business School, University of Manchester, UK</td>
</tr>
<tr>
<td>Dr. R. Allen Shoaf</td>
<td>B.A., M.A., Ph.D. Cornell University, Teaching Assistant in the English Department, University of Florida, US</td>
</tr>
<tr>
<td>Professor Maura Sheehan</td>
<td>Professor, International Management, Director, International Centre for Management &amp; Governance Research (ICMGR), Ph.D. in Economics, UK</td>
</tr>
<tr>
<td>Dr. Mehdi Taghian</td>
<td>Senior Lecturer, Faculty of Business and Law, BL Deakin Business School, Melbourne Burwood Campus, Australia</td>
</tr>
<tr>
<td>Dr. Carl Freedman</td>
<td>B.A., M.A., Ph.D. in English, Yale University, Professor of English, Louisiana State University, US</td>
</tr>
<tr>
<td>Dr. Agni Aliu</td>
<td>Ph.D. in Public Administration, South East European University, Tetovo, RM, Asociater profesor South East European University, Tetovo, Macedonia</td>
</tr>
<tr>
<td>Dr. Tsutomu Harada</td>
<td>Professor of Industrial Economics, Ph.D., Stanford University, Doctor of Business Administration, Kobe University</td>
</tr>
<tr>
<td>Dr. Wing-Keung Won</td>
<td>Ph.D., University of Wisconsin-Madison, Department of Finance and Big Data Research Center, Asia University, Taiwan</td>
</tr>
<tr>
<td>Dr. Xiaohong He</td>
<td>Professor of International Business, University of Quinnipiac, BS, Jilin Institute of Technology; MA, MS, Ph.D., (University of Texas-Dallas)</td>
</tr>
<tr>
<td><strong>Dr. Carlos García Pont</strong></td>
<td><strong>Dr. Söhnke M. Bartram</strong></td>
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</tr>
<tr>
<td>Associate Professor of Marketing</td>
<td>Department of Accounting and Finance</td>
</tr>
<tr>
<td>IESE Business School, University of Navarra</td>
<td>Lancaster University Management School</td>
</tr>
<tr>
<td>Doctor of Philosophy (Management), Massachusetts Institute of Technology (MIT)</td>
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<td>MBA/BBA (University of Saarbrücken)</td>
</tr>
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<td>Degree in Industrial Engineering, Universitat Politècnica de Catalunya</td>
<td>Web: lancs.ac.uk/staff/bartras1/</td>
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</table>

<table>
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<tr>
<th><strong>Dr. Bassey Benjamin Esu</strong></th>
<th><strong>Dr. Dodi Irawanto</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>B.Sc. Marketing; MBA Marketing; Ph.D Marketing</td>
<td>Ph.D., M.Com, B.Econ Hons.</td>
</tr>
<tr>
<td>Lecturer, Department of Marketing, University of Calabar</td>
<td>Department of Management</td>
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<tr>
<td>Tourism Consultant, Cross River State Tourism Development Department</td>
<td>Faculty of Economics and Business</td>
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<tr>
<td>Co-ordinator, Sustainable Tourism Initiative, Calabar, Nigeria</td>
<td>Brawijaya University</td>
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<th><strong>Dr. Ivona Vrdoljak Raguz</strong></th>
<th><strong>Dr. Yongbing Jiao</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Dubrovnik, Head, Department of Economics and Business</td>
<td>Ph.D. of Marketing</td>
</tr>
<tr>
<td>Head, Department of Economics and Business Economics, Croatia</td>
<td>School of Economics &amp; Management</td>
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<tr>
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<td>Ningbo University of Technology</td>
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<td></td>
<td>Zhejiang Province, P. R. China</td>
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<tr>
<th><strong>Dr. Charles A. Rarick</strong></th>
<th><strong>Yue-Jun Zhang</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ph.D.</td>
<td>Business School,</td>
</tr>
<tr>
<td>Professor of International Business</td>
<td>Center for Resource and</td>
</tr>
<tr>
<td>College of Business</td>
<td>Environmental Management</td>
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<td>Purdue University Northwest</td>
<td>Hunan University, China</td>
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<th><strong>Dr. Albrecht Classen</strong></th>
<th><strong>Dr. Brandon S. Shaw</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>M.A. (Staatsexamen), Ph.D. University of Virginia, German</td>
<td>B.A., M.S., Ph.D., Biokinetics, University of Johannesburg, South Africa</td>
</tr>
<tr>
<td>Director, Summer Abroad Program, Medieval Europe Travel Course</td>
<td>Professor Department of Sport and Movement Studies</td>
</tr>
<tr>
<td></td>
<td>University of Johannesburg, South Africa</td>
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The Impact of Inconsistent Tracking on Inventory Management Case Study Societe Buns - Cameroon

By Dr. Eyong Ako

University of Bamenda

Abstract- As a result of a rapid increase in inventory management and the time required to manage inventory management, many organizations have resulted to the tracking of inventory. Due to this, there should be some means of accurately tracking inventory. Due to this, there should be some means of accurately tracking inventory in order to ease the management of inventory. Some of the most useful methods of tracking inventory are barcodes where every item carries a label that gives information on the items, stock books and the Kanban system. It is against this background that the main endeavour of this project is to investigate if inconsistent tracking has an impact of inventory management with specific objective being to find out the impact of documentation on inventory management. From these objectives the following questions were asked; what impact does inconsistent tracking have on inventory management. The theories adapted to back this work were; The Just In Time theory by Taiichi Ohno (1984), The Wilson’s Model for Inventory Management by R.H Wilson (1934) and the Theory of Constraints by Dr Eliyah Goldrath (1984). The methods of data collection included primary and secondary sources. Conclusions were drawn from the data collected and recommendations were made such as making proper use of the available tracking software.

Keywords: inconsistent, tracking, inventory and inventory management.

GJMBR-E Classification: JEL Code: G31

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The Impact of Inconsistent Tracking on Inventory Management Case Study Societe Buns - Cameroon

Dr. Eyong Ako

Abstract- As a result of a rapid increase in inventory management and the time required to manage inventory management, many organizations have resulted to the tracking of inventory. Due to this, there should be some means of accurately tracking inventory. Due to this, there should be some means of accurately tracking inventory in order to ease the management of inventory. Some of the most useful methods of tracking inventory are barcodes where every item carries a label that gives information on the items, stock books and the Kanban system. It is against this background that the main endeavour of this project is to investigate if inconsistent tracking has an impact on inventory management with specific objective being to find out the impact of documentation on inventory management. From these objectives the following questions were asked; what impact does inconsistent tracking have on inventory management. The theories adapted to back this work were; The Just In Time theory by Taiichi Ohno (1984), The Wilson’s Model for Inventory Management by R.H Wilson (1934) and the Theory of Constraints by Dr Eliyah Goldrath (1984). The methods of data collection included primary and secondary sources. Conclusions were drawn from the data collected and recommendations were made such as making proper use of the available tracking software.

Keywords: inconsistent, tracking, inventory and inventory management.

I. Introduction

The lifeblood of any business is getting your products to your customers on time. And according to (Abby J. 2022), staying on top of your inventory and controlling it effectively and efficiently helps you meet demand and satisfy customers. Inventory control is a daunting task. The process and results impact every aspect of your business.

According to (L. Tundura al. 2016), Inventory control is one of the essential management areas in organizations because it plays an internal role in the organizations such as facilitation of continuous production, smoothening of operations and enhancement of customer service. Inventory control is an integral aspect of the inventory management process (Abby J. 2020). It is the daily routine of managing stock within the warehouse. Inventory control activities include receiving, storing and transferring stock, as well as tracking and fulfilling orders and returns.

a) Some Common Techniques of Inventory Control

- FIFO (First in, First out) – The oldest inventory is used first to fulfill customer orders.
- LIFO (Last in, First out) – The inventory received most recently is used to fulfill customer orders.
- FEFO (First expiring, First out) – The inventory closest to its expiration date is used to fulfill customer orders.

b) Statement Problem

Inventory tracking is very vital in most organizations as it helps in enhancing business operations. Tracking and traceability should be easily done but that is not always the case. Taking SOCIETE BUNS as case study, some project directors are adamant to change and do not follow the company’s stated procedures for inventory management making tracking difficult. Also, the fact that most store keepers do not send all documents used at the sites back to the central store keeper makes inventory recording and tracking difficult. Base on the above challenges, the main reasons for carrying out this research was to investigate the impact of inconsistent tracking on inventory control and specifically we have To find the impact of documentation on Inventory Management.

- To investigate if inventory tracking software’s have an impact on inventory management.
- To find out if coding has an impact on inventory management.

II. Literature Review

a) Theoretical Review

Theories are assumptions formulated to better explain concepts. In the context of Inventory Management, we shall be expatiating on the theories mentioned in chapter one of this work.


Just in Time (JIT) is a Japanese management philosophy which has been applied in practice since the early 1970’s in many Japanese manufacturing organisations. It was first developed and perfected within the TOYOTA manufacturing plants by Taiichi Ohno as a means of meeting customer demand with minimum delays.
The JIT method is an inventory strategy where materials are only ordered and received as they are needed in the production process. The goal of this method is to reduce costs by saving money on overhead inventory expenses. This allows the auto company to save on storing inventory and reduce waste. A JIT strategy eliminates overproduction, which happens when the supply of an item in the market exceeds demand and leads to an accumulation of unsalable inventories. These unsalable products turn into inventory dead stock, which increases waste and consumes inventory space.

d) The Wilsons Model for Inventory Management by Rh Wilson (1934)

The Wilsons Model also known as the EOQ (Economic Order Quantity) system is a very widely used stock management model to reduce inventory costs in a warehouse. It is one of the simplest stock management models to implement which is why it is so widely used. It focuses on calculating the appropriate quantity of each product or raw material order of a company to reduce its inventory costs to a minimum.

This model became popular in 1934 with the publication of an article by R.H. Wilson, after whom the model is named, but it was developed originally by the engineer Ford Whitman Harris when he worked in the company Westinghouse corporation.

The model was created with the clear objective of systematising the goods that are periodically held in the warehouse and defining the quantity and date on which orders must be placed with suppliers. Although this system is commonly used to systematise the purchase of raw materials, it is applicable to optimising the purchase of any product required by the company provided purchasing costs can be determined in order and storage terms.

The method is simple and based on a formula that helps to determine when and in what quantity company orders must be placed, taking into account demand and the company minimum safety stock is.

In order to develop this model, some basic assumptions were made which are as seen below

- It is based on the assumption that the company’s demand is known and independent and without major fluctuations during the year, so it is therefore constant.
- The unit cost of each product or purchase must also fulfill these conditions, being known and fixed throughout the year. It is not valid therefore for seasonal products.
- Storage costs are also known and depend on the level of stock.
- Potential purchase or order volume discounts are not considered.
- The supplier’s supply and loading times are also considered constant and are known.

- It is assumed that there is no stock depletion and that at any time any product quantity can be requested from the supplier.

d) The Theory of Constraints by Dr Eliyah Goldratt (1984)

The Theory of Constraints (TOC) first surfaced in 1984, in a book written by Dr Eliyah Goldratt. In “The Goal” that is geared to help organizations achieve their goals. This theory geared towards eradicating bottlenecks and other issues clogging up the supply chain, can be a major boon for lean manufacturing efforts. Like so many other theories, strategies and practices, the TOC is intended to improve manufacturing processes so production can flow more smoothly and result in better efficiency. But before you can employ it in your factory you will need to know what TOC is and its benefits and the issues it can reduce and prevent.

i. What is the Theory of Constraints?

The TOC is an organizational change method that is focused on profit improvement. The essential concept of the TOC is that every organization must have at least one constraint. A constraint is any factor that limits the organization from getting more of whatever it strives for, which is usually profit. The goal focuses on constraints as bottle-neck processes in a job-shop manufacturing organization. However, many non-manufacturing constraints exists, such as market demand, or a sales department’s ability to translate market demand into orders.

The theory of constraints defines a set of tools that change agents can use to manage constraints, thereby increasing profits. Most businesses can be viewed as a linked set of processes that transform inputs into saleable outputs. TOC conceptually models this system as a chain and advocates the familiar adage that a chain is only as strong as its weakest link.

Goldratt defines a five-step process that a change agent that a change agent can use to strengthen the weakest link. The five steps of the Theory of constraints include:

- Identify the system constraint
  The part of the system that constitutes its weakest link can be either physical or a policy.
- Decide how to exploit the constraint
  Goldratt instructs the change agent to obtain as much as capability as possible from a constraining component, without undergoing expensive changes or upgrades.
  An example is to reduce or eliminate the down time of bottleneck operations.
- Subordinate everything else.
  The non-constraint components of the system must be adjusted to a “setting” that will enable the constraint to operate maximum effectiveness. Once this has been done, the overall system is evaluated
Finished goods are items that are ready to sell.
- Maintenance, Repair and Operations (MRO) Goods
  - MRO is inventory often in the form of supplies that supports making a product or the maintenance of a business.

The Relationship Between Inventory Tracking and Inventory Management

Inventory tracking as the name suggests refers to the tracking of stock levels throughout a business’ operations. These are continually influx as customers make purchases and new stocks are brought in, whether to replace items that have been sold to those customers or in anticipation of changing demand patterns (as in the run up for Christmas, for example).

Inventory Management is the process of ordering, storing and using a company’s inventory. This includes the management of raw materials, components and finished products, as well as warehousing and processing such items.

Inventory tracking has a direct relationship with inventory management because proper and consistent inventory tracking results to better inventory management which goes a long way to reduce cost, promote accountability and for better decision making.

Review by Objectives

There are some objectives which will be analyzed in the paragraphs below.

The Impact of Inconsistent tracking on Inventory Management

Inventory tracking as the name suggests refers to the tracking of stock levels throughout a business’ operations. These are continually influx as customers make purchases and new stocks are brought in, whether to replace items that have been sold to those customers or in anticipation of changing demand patterns (as in the run up for Christmas, for example).

Tracking has a significant impact on inventory management as accurate inventory tracking allows brands to fulfill orders on time and accurately. It also permits warehouse managers to know exactly where goods are found at a given point in time in the supply chain. Inconsistent tracking makes inventory management more complex and accountability very difficult.

Here the researcher finds out the various impacts inconsistent tracking has on inventory management with the case of Société BUNS SA.

This situation of inconsistent tracking comes from the fact that most store keepers at the various sites do not send the various documents necessary for tracking at the appropriate time. They do not send their bon de receptions and bordereaux de livraisons back to the store keeper at the head quarter for tracking and accountability. It is also due to the fact that most Project directors at the various project sites do not respect of the Company’s inventory procedures. Some even mishandle the company’s.

The Impact of Documentation on Inventory Management

Documents are a very vital part of Inventory Management. These documents are used for actions and transactions related to inventory items, whether the transactions affect the quantity of the stock or the value thereof (transit, Internal transit, consumption, composition, production, destruction, shortage, surplus).

Documentation is a very sensitive part of inventory management and needs to be seriously looks upon by BUNS. Documentation influences inventory Management in the company positively when all the necessary documents needed to control inventory are available. It facilitates the central storekeeper’s work. But with Société BUNS, the central storekeeper doesn’t have all the documents needed to record and keep track of inventory making it difficult to manage inventory from the various construction sites. This goes a long way in influencing inventory management negatively.

The effects of Inventory Tracking software’s on Inventory Management

Inventory tracking software have a significant impact on inventory Management. With Inventory tracking software inventory management is carried out easily.

With the Case of Société BUNS, software is not used for all their inventory operations even though they have a common software in all sites and at the base to record the flow of material. It is therefore very difficult for the central storekeeper to easily predict the number of materials which have been received at a given site and the quantity of goods which have left one site for another. This makes inventory recording and accountability difficult.

The effects of coding on Inventory Management

The objective of coding is to identify goods in a unique way (there can’t be two products with the same code. Coding has significant effects on inventory management as seen in the case of Société Buns SA.

The company has a practice of creating codes for every new item or equipment purchased by the company and are placed as tickets on the equipment such as computers, photocopying machines and other
machines used at the various sides. Some Project directors and storekeepers at the construction site do not follow this inventory procedure. When new company items are purchased at the sites, some of them are not given codes and tickets making tracking and traceability difficult for those items. At the end of the construction projects, some workers throw some of the company materials and equipment’s with the codes making traceability difficult.

e) Methodology

The research design used in the course of this study at Société BUNS was the non-experimental design through the use of questionnaires and interview. The sources of data collection are divided into the primary and secondary sources of data collection. The researcher used the descriptive analysis where in, tables and charts will be used in order to have the various percentages upon which conclusions will be made with respect to the research.

III. Data Presentation, Analysis and Interpretation of Findings

a) Presentation and Analysis of Data

SECTION A GENDER DISTRIBUTION OF THE RESPONDENT

Table 1: Gender of Workers

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
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<tr>
<td>Females</td>
<td>30</td>
<td>40.0</td>
<td>40.0</td>
<td>40.0</td>
</tr>
<tr>
<td>Males</td>
<td>50</td>
<td>60.0</td>
<td>60.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
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</tbody>
</table>

Figure 1: Showing Gender of Workers

Table 01 shows that the workers present in the company are mostly made up of males as seen from the analysis from SPSS with a valid percent of 60%. This implies that the decision of inconsistency tracking inventory are mostly determined by the male workers.

Table 2: Age of Workers

<table>
<thead>
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<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
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<tbody>
<tr>
<td>20-25</td>
<td>11</td>
<td>36.7</td>
<td>36.7</td>
<td>36.7</td>
</tr>
<tr>
<td>26-30</td>
<td>1</td>
<td>3.3</td>
<td>3.3</td>
<td>40.0</td>
</tr>
<tr>
<td>31-40</td>
<td>11</td>
<td>36.7</td>
<td>36.7</td>
<td>76.7</td>
</tr>
<tr>
<td>Above 40</td>
<td>7</td>
<td>23.3</td>
<td>23.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100.0</td>
<td>100.0</td>
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</table>
Analysis from SPSS shows that most of the workers are in the range 20-25 and 31-40 with valid percent of 36.7%. This analysis explains that the workers are not really verse with the inventory system thus making them to be inconsistent in their reports and work.

**Table 3: Marital Status**

<table>
<thead>
<tr>
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<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
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</thead>
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<tr>
<td>Married</td>
<td>30</td>
<td>30.0</td>
<td>30.0</td>
<td>30.0</td>
</tr>
<tr>
<td>Single</td>
<td>34</td>
<td>20.0</td>
<td>20.0</td>
<td>50.0</td>
</tr>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Widow</td>
<td>8</td>
<td>26.7</td>
<td>26.7</td>
<td>76.7</td>
</tr>
<tr>
<td>Widower</td>
<td>8</td>
<td>23.3</td>
<td>23.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
<td>100.0</td>
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</tbody>
</table>
Figure 3 and table 3 explains the marital status of the workers. This can be seen from statistics that most of the workers the company employs are married thus will not really affect the output of the company as they will be full concentration at jobsite.

**Table 4: Educational Level**

<table>
<thead>
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<th>Cumulative Percent</th>
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<tr>
<td>Diploma</td>
<td>5</td>
<td>16.7</td>
<td>16.7</td>
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<td>HND</td>
<td>20</td>
<td>16.7</td>
<td>16.7</td>
<td>33.3</td>
</tr>
<tr>
<td>Valid Degree</td>
<td>25</td>
<td>26.7</td>
<td>26.7</td>
<td>60.0</td>
</tr>
<tr>
<td>Master</td>
<td>30</td>
<td>40.0</td>
<td>40.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 4: Showing Educational Level**

Here, that statistics shows that most of the workers that been employed by the company are qualified workers with high certificate as shown in table 4. The company has most of its workers with master’s level.

**Table 5: Duration of Workers**

<table>
<thead>
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<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
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<tbody>
<tr>
<td>Less than 2 yrs</td>
<td>20</td>
<td>26.7</td>
<td>26.7</td>
<td>26.7</td>
</tr>
<tr>
<td>3-5 yrs</td>
<td>20</td>
<td>46.7</td>
<td>46.7</td>
<td>73.3</td>
</tr>
<tr>
<td>Above 6 yrs</td>
<td>40</td>
<td>26.7</td>
<td>26.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Figure 5: Showing Duration of Workers

Analysis from SPSS and response from respondent shows that most of the workers employed by the company have working experience between the range of 3-5 years with valid percent of 46.7%. Therefore, it indicates that most of the workers at the company have no clear cut mastery of inventory system.

SECTION B: TRACKING (TR)

Table 6: TR 1

<table>
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<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
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</thead>
<tbody>
<tr>
<td>SA</td>
<td>25</td>
<td>33.3</td>
<td>33.3</td>
<td>33.3</td>
</tr>
<tr>
<td>A</td>
<td>25</td>
<td>16.7</td>
<td>16.7</td>
<td>50.0</td>
</tr>
<tr>
<td>Valid</td>
<td>15</td>
<td>13.3</td>
<td>13.3</td>
<td>63.3</td>
</tr>
<tr>
<td>D</td>
<td>15</td>
<td>36.7</td>
<td>36.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Figure 6: Showing Inventory Tracking Methods

Figure 6 shows that respondent disagree with the fact that the organization practices good inventory tracking methods as this can be from the percent given which is 36.7%. this therefore affirms the inconsistency in inventory management system.
From data collected and analysis from the software SPSS, we can clearly see that respondent to this question strongly disagree to the fact that inventory Procedures are followed to the latter by project directors and store keepers. This can be seen above from figure 7 as it shows that 43.3% of the respondent affirms the fact of inventory procedures not followed to the latter.

**Figure 7: Showing Inventory Procedures**

**Table 7: TR 2**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>SA</td>
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<td>23.3</td>
<td>23.3</td>
</tr>
<tr>
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<td>20</td>
<td>23.3</td>
<td>23.3</td>
<td>46.7</td>
</tr>
<tr>
<td>Valid</td>
<td>30</td>
<td>43.3</td>
<td>43.3</td>
<td>90.0</td>
</tr>
<tr>
<td>D</td>
<td>10</td>
<td>10.0</td>
<td>10.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
<td>100.0</td>
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</tr>
</tbody>
</table>

**Table 8: TR 3**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
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</thead>
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<td>20.0</td>
</tr>
<tr>
<td>A</td>
<td>11</td>
<td>16.7</td>
<td>16.7</td>
<td>36.0</td>
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<tr>
<td>Valid</td>
<td>11</td>
<td>16.7</td>
<td>16.7</td>
<td>53.3</td>
</tr>
<tr>
<td>D</td>
<td>33</td>
<td>46.7</td>
<td>46.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Indications from analysis shows that the respondent disagree with the fact that the company Tracking procedures are flexible as this can be seen from the table with a valid percent of 46.7 and same with figure 8 portraying a great section of the disagree respondent.

**SECTION C: SOFTWARES (SW)**

**Table 9: SW 1**

<table>
<thead>
<tr>
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<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
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<td>47</td>
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<td>40.0</td>
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<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD</td>
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<td>20.0</td>
<td>80.0</td>
</tr>
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<td>D</td>
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<td>20.0</td>
<td>20.0</td>
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<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 9: Showing Inventory Tracking Software’s for Inventory Management**
SPSS analysis and data imputed from respondent indicates that the organization uses inventory tracking software’s for inventory management as we can see from the above table having valid percent of 40% as the agree to the fact.

Table 10: SW 2

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
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<th>Cumulative Percent</th>
</tr>
</thead>
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<td>SD</td>
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<td>33.3</td>
<td>76.7</td>
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<tr>
<td>D</td>
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<td>23.3</td>
<td>23.3</td>
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</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Figure 10: Showing how Software’s are Properly used

Analysis shows that the respondents strongly disagree with that aspect that the organizations software’s are properly used by all company store keepers as we can see that they have a valid percent of 33.3 of the total percent and total respondent who actually responded to the question.

Table 11: SW 3

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
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</tr>
<tr>
<td>SD</td>
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<td>80.0</td>
</tr>
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<td>20.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Figure 11: Showing Software’s are Efficient in the Tracking of Inventory

Table 11 shows that the respondent strongly agree to the fact that the company’s software’s are efficient in the tracking of inventory as this gives us a valid percent of 40% out of the total respondent. This can also be seen from figure 11 showing a greater portion of those who strongly agree to the fact that the software’s are efficient in the tracking of inventory.

Table 12: SW 4

<table>
<thead>
<tr>
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</thead>
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</tr>
<tr>
<td>SD</td>
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<td>43.3</td>
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<td>13.3</td>
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<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Figure 12: Showing Organization Practices Good Inventory Tracking Methods
Respondent to this question strongly disagree to the fact that the organization practices good inventory tracking methods as figure 12 from SPSS analysis show us a valid percent of 43.3% of the total percent.

**SECTION D: DOCUMENTATION (DC)**

*Table 13: DC1*

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
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<th>Valid Percent</th>
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</tr>
</thead>
<tbody>
<tr>
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<td>46.7</td>
<td>46.7</td>
</tr>
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<td>20.0</td>
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<tr>
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<td>90.0</td>
</tr>
<tr>
<td>D</td>
<td>10</td>
<td>10.0</td>
<td>10.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 13: Documents Play a Vital Part in Inventory Management*

Statistics from SPSS shows that the respondent made up of 30 with a valid percent of 100, 46.7 % strongly agree that documents play a vital part in inventory management as we can also see from figure 13 indicating portion of strongly agree respondent.

*Table 14: DC 2*

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
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<td>40</td>
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<td>46.7</td>
<td>63.3</td>
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<tr>
<td>Valid</td>
<td>20</td>
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<td>20.0</td>
<td>83.3</td>
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<td>D</td>
<td>10</td>
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<td>16.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Figure 14: Showing Incomplete Documents Disturb the Inventory Management Process

Analysis shows that respondents agree to the fact that incomplete documents disturb the inventory management process as we can see from the statistics from SPSS table which gives us a valid percent of 46.7% and figure 14 showing a greater proportion of those who agree to the aspect of incomplete document disturb inventory management process.

Table 15: DC3

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
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<td>20.0</td>
<td>20.0</td>
</tr>
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<td>A</td>
<td>14</td>
<td>16.7</td>
<td>16.7</td>
<td>36.7</td>
</tr>
<tr>
<td>Valid SD</td>
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<td>46.7</td>
<td>83.3</td>
</tr>
<tr>
<td>D</td>
<td>14</td>
<td>16.7</td>
<td>16.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Figure 15: Showing too Many Documents Required in Recording Inventory
Here, analysis from SPSS indicate that the respondent strongly disagrees to the fact that too many documents required in recording inventory as we can see from the table showing us a valid percent to this question of 46.7%.

**Hypothesis Testing**

### One-Sample Statistics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
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</thead>
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<td>Documentation has a significant impact on inventory management</td>
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<td>1.50</td>
<td>.674</td>
<td>.195</td>
</tr>
<tr>
<td>Inventory tracking software’s have a link with inventory management</td>
<td>12</td>
<td>1.75</td>
<td>.866</td>
<td>.250</td>
</tr>
<tr>
<td>Coding has a significant impact on inventory management</td>
<td>12</td>
<td>2.00</td>
<td>.853</td>
<td>.246</td>
</tr>
</tbody>
</table>

### One-Sample Test

<table>
<thead>
<tr>
<th></th>
<th>T</th>
<th>Df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>Documentation has a significant impact on inventory management</td>
<td>-17.983</td>
<td>11</td>
<td>.000</td>
<td>-3.500</td>
<td>-3.93</td>
</tr>
<tr>
<td>Inventory tracking software’s have a link with inventory management</td>
<td>-13.000</td>
<td>11</td>
<td>.000</td>
<td>-3.250</td>
<td>-3.80</td>
</tr>
<tr>
<td>Coding has a significant impact on inventory management</td>
<td>-12.186</td>
<td>11</td>
<td>.000</td>
<td>-3.000</td>
<td>-3.54</td>
</tr>
</tbody>
</table>

Significance level = 0 which is below 0.05 which means we reject the null hypothesis of the mean being equal to 5 which therefore implies the mean is not equal to 5. Better still, we are 95% sure that the level of tracking on inventory management is not equal to 5.

IV. **Discussions, Conclusions, Recommendations**

a) **Discussion of Findings and Implications**

The main focus of this study was to verify if inconsistent tracking has an impact on inventory management of Société BUNS, if documentation has an impact on inventory management in BUNS SA, if
inventory tracking software’s have an impact on inventory management and if coding has an impact on inventory Management and equally if inventory procedures are respected. These four hypotheses resulting from the four objectives which were formulated.

i. **Documentation has a Significant Impact on Inventory Management**
   From the statistics from SPSS table, we have a valid percent of 46.7% who strongly agreed showing a greater proportion of those who agree to the aspect of incomplete document disturb inventory management process. This therefore shows that documentation plays a vital role in inventory management. This implies that every organization has to pay special attention to documentation for accountability and for traceability.

ii. **Inventory Tracking Software’s have an impact on Inventory Management**
   Analysis shows that Inventory tracking software have an impact on inventory management. In the case of Société BUNS, it is more of a negative impact the respondents strongly disagree with that aspect that the organizations software’s are properly used by all company storekeepers as we can see that they have a valid percent of 33.3 of the total percent and total respondent who actually responded to the question. These responses go a long way to show that inventory tracking software have an impact on inventory management and its more of a negative impact in the case of Société BUNS since it’s not properly used. This implies that the company has to take all measures to make sure that the storekeepers and controllers use the inventory tracking software properly.

iii. **Coding has a Significant Impact on Inventory Management**
   From the analysis above. It shows that respondent strongly agree to the fact that coding has a significant impact on inventory management as most of the respondents strongly disagree to the fact that coding and its procedures are respected by the employees in charge as the percentage is at 43%.

b) **Conclusions**
   After investigations on this research study, we can conclude that the purpose of the study was to educate on the Impact of inconsistent tracking on inventory management and the necessity to accurately track inventory in order to carry out inventory management properly. It should be noted that most organisations do not pay much attention to assessing their levels of inventory tracking. According to the first hypothesis, it can be seen that documentation has a significant effect on inventory management as the statistics show that 46.7% of the respondents strongly agree. It impacts inventory management negatively at Société BUNS as incomplete documentation disrupts inventory recording and tracking. Also, it is very important for the organization to ensure that the tracking software be used properly and in case of any issue it should be arranged. It is also important for the organization to constantly check and make sure storekeepers and controllers use the software properly.

   In addition, it is also important that workers respect the coding procedures so it remains easy for the storekeepers to track inventory. Therefore, in a nutshell, it is but normal that Inconsistent tracking will have an impact on inventory management.

c) **Policy Implications**
   Société BUNS SA should use both long term and short-term measures to implement new policies which will solve the inconsistency in Inventory tracking in order to ease inventory management and increase organizational performance.

d) **Recommendations**
   After carrying out this research, the following recommendations were made to help the organization reshape her Inventory tracking methods and inventory management method.

1. The Company should use more of inventory software so that it can ease traceability of inventory.
2. Management should try to arrange the existing software used by the company in such a way that all the storekeepers at the various sites will be able to record
   Material flows in the system making it visible to all other storekeepers and controllers.
3. The company should sanction employees who do not submit the necessary documents needed to record inventory after 48hours.
4. Management should sensitize workers especially project directors on the importance of codes and the importance of respecting inventory procedures.
5. The Central storekeeper should give good estimates for the purchase of office equipment’s in order to avoid constantly running out of stock.

**References Références Referencias**


Contribution of Mobile Banking Informational Service on Customer Satisfaction in Tanzanian Commercial Banks

By James Daniel

Abstract- This study examined the contribution of mobile banking Informational Service on customer satisfaction. Three elements of mobile banking i.e., information service was assessed to find out the role they play on customer satisfaction at CRDB Chamwino Branch bank. The study adopted a cross sectional survey study design where data was collected at one point in time. In addition to that, both qualitative as well as quantitative approaches were employed in collecting data for triangulation. Quantitative data was collected from 99 CRDB- Chamwino Branch customers through survey, whereas, the qualitative data were collected from CRDB officials through interviews. Quantitative data was analyzed through SPSS, where, descriptive statistics as well as inferential and Logistic Regression model were used. Furthermore, the relationships between variables were established through binary Logistic Regression. The qualitative data also were analyzed through Thematic Analysis technique. Findings how there is positive significant relationship is also established between mobile banking information service and customer satisfaction with P- Value 0.002. The study concludes that mobile banking enhances customer satisfaction in commercial banks. The study recommends for more efforts to be made in making sure mobile banking technology is enhanced.

Keywords: commercial banks, customer satisfaction, informational service, mobile banking, tanzania.

GJMBR-E Classification: DDC Code: 621.3825 LCC Code: TK5104

Strictly as per the compliance and regulations of:
Contribution of Mobile Banking Informational Service on Customer Satisfaction in Tanzanian Commercial Banks

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Keywords: commercial banks, customer satisfaction, informational service, mobile banking, tanzania.

I. INTRODUCTION

Mobile banking also recognized as m-banking is a recent innovation in the mobile scientific discoveries. It is a new service delivery channel which followed the already established traditional banking means such as “automated teller machines, telephone, and internet banking” (Amiri & F, 2012) Various terms are used to mean mobile banking comprising “m-banking Kahandawa & Wijayanayake (2014) “branchless banking (Balogun, Ajiboye, & Dunsin, 2013) “m-payments”, “m-transfers”, “m-finance” Yousuf (2017)and “pocket banking” (Amin, 2006). These terms associated with mobile banking unambiguously suggest that this innovative service is conducted using a portable or mobile device such as mobile phone or tablet (Sakhaei, Afshari, & Esmaili, 2014). It offers customers an opportunity to cooperate with a bank through a “portable device” (Gomachab, 2016).

Three devices are mentioned to qualify to provide mobile banking service: mobile phone, smart phone, and tablet in a bid to distinguish mobile banking from electronic banking that is accessed through a different user interface, a laptop or desktop PC (Yousuf, 2017). The first mobile banking service was thrown at the end of the 1990s by Pay box in association with Deutsche Bank, both Germany institutions. In the beginning it was introduced and verified in some European nations: Germany itself, United Kingdom, Austria, Spain, and Sweden. In the category of the unindustrialized countries, Kenya took the lead by introducing an m-banking service based on text, M-Pesa (Workuet al., 2016).

Mobile banking is used to offer a variety of financial and non-financial services. The services offered are divided into transaction and information services. Transaction services includes but not limited to payment of bills (LUKU, TAXES, TV subscriptions), payments between users, transfer of funds, remittances, shopping and contributions, and mobile balance recharge while information services include inquiring balance, brief bank statements, changing PIN, Check book request, due alerts for expenses, and locating ATMs (Shaikh & Karjaluoto, 2015).The introduction of mobile banking technology was meant to offer variety of services to the customers to enhance customer satisfaction. Customer satisfaction (CS) has become essential in marketing originating from the 1960s when it was viewed as “satisfying the needs and desires of the consumer” although the word was already in use in English from the 13th century (Keith, 1960; Parker & Mathews, 2001). Customer satisfaction then has become to be viewed in two approaches, first as an outcome of consuming something and secondly as process, which suggests an evaluation of what one received against their expectation (Parker & Mathews, 2001).

The rapidly developing Statistics and Communication Technology (ICT) consumes many changes in the society, including on ways of which service providers communicate to customers. With the technological revolution in this century the world is becoming a village through the process of globalization. At the end of the last century, the Global System for
Mobile Communications (GSM) was advanced, this revolutionized on how mobile devices are used (Hillebrand, 2002; Moul, Pautet, & Haug, 1992; Scourias, 1995). With the development of GSM and its improvements, the need for mobile banking in the finance industry arose where users could conduct all financial and non-financial transactions via their mobile devices and reducing the need to physically visit branches. Mobile banking was preceded by web-based banking or internet banking where users accessed their accounts and carried out transactions through banks’ web pages.

II. Literature Reviews

a) Kano’s Model of Customer Satisfaction

In this model, Kano (1984) the model deals the least values that clienteles expect from a facility or product., regarding the cost of services, the Kano’s model discusses on the attractive requirements of customer satisfaction where the cost of services could be looked as one of them.

Must-be requirements (Must be): If these desires are not achieved, the consumer will be particularly disappointed. On the other hand, as the client receipts these desires to be settled, their fulfillment which does not increase satisfaction. The must-be requirements are elementary measures of an invention. Satisfying the must-be requirements on individually lead to a state-owned of “unhappy”. The client respects the must-be requirements as basics, he receipts them for decided and hence does not openly. Here the bank customers seem to be happy with the mobile banking services although it seems to be happy even before the mobile banking launched at NCBA the customer were happy with the services given at NCBA bank. Hence the Mobile banking adds more satisfaction to customers is now customer transacts at their own remote’s areas.

One-dimensional requirements (Attractive): With respect to these necessities, buyer gratification is comparative to the equal of satisfaction - the advanced the level of self-actualization, the advanced the consumer’s gratification and vice versa. Basic provisions are usually openly obligatory from the purchaser. Attractive requirements (indifferent): These desires are the invention dealings which must exciting effect on how fulfilled a client with assumed product. Smart desires are neither apparently stated nor assessed by the purchaser. Sustaining this necessity leads to more than comparative fulfillment. If they are not met, though, there is no sensation of displeasure.

In the relation to the subject the Kano model help the use of the categories to measure the levels satisfaction of the customer on the performance, basic, excitement, indifferent and reverse. Kano’s model helped on identifying the satisfying customers and the dissatisfying customers through the products or services given by the NCBA bank. Weather its basic to them or performed are the categories for satisfaction.

b) Disconfirmation Theory

Disconfirmation theory developed by Oliver (1977 and 1980) argues that satisfaction is connected to the scope and way of the disconfirmation involvement that happens as a consequence of linking service routine beside prospects. Szymanski and Henard start in the meta-analysis that the disconfirmation model is the best analyst of consumer fulfillment. Ekincietal (2004) cites Oliver’s modernized meaning on the disconfirmation model, which shapes “Fulfillment is the guest’s self-actualization reaction. It is a decision that an invention or facility feature, or the creation or facility itself, delivered (orisif) an agreeable level of consumption-related gratification, counting heights of below-or over-fulfilment.

III. Research Methodology

To attain this objective qualitative and quantitative research approaches were used whereby survey research design techniques of data compilation method were used. Both primary data and secondary data were involved in the form of interviews, document reviews and survey. Systematic and unsystematic random sampling and purposive sampling was used as sampling procedures in the study, this study involved...
with the sample size of 99 respondents from customers in CRDB Chamwino Branch.

\[ n = \frac{N}{1 + N(e)^2} \]

Whereby \( n \) = Sample size, \( N \) = Targeted population, \( e \) = Level of precision or confidence interval i.e., 10%. The reasons of adopted 10% and not 5% or 1% is due to the coefficient variation of the population within the researcher interest.

\[ n = \frac{12,670}{1 + 12,670(0.1)^2} = \frac{12,670}{127.7} = 99 \text{ Customers} \]

\[ \log(\text{Odd ratio}) = \log\left(\frac{(Y_i=1)}{(Y_i=0)}\right) X_i \beta \]

(1)

**IV. Findings and Discussion**

Therefore, internal reliability of the 18-item scale was assessed. Results indicated a reliability alpha value of 0.965. This indicates that the internal consistency of items is to the extent of 0.965 out of 1 indicating a very high and reliable consistency of the items. Table 1. indicates the findings.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of Items</th>
<th>Alpha Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cronbach’s Alpha Value</td>
<td>18</td>
<td>0.965</td>
</tr>
</tbody>
</table>

Source: Research Findings (2022)

a) **Binary Logistic Regressions Analysis**

A binary logistic regression analysis was carried out to estimate the logit model. Since the responses of a dependent variable (Customer Satisfaction) had 5-point Likert scale responses; then a cutoff point of was created where all the mean values of 3.5 and above represented customers who are satisfied and were given a value of one. while the rest represented unsatisfied and were assigned a value of zero (0) to make binary logistic regression possible.

b) **Binary Logistic Regression Goodness of Fit Test**

The Hosmer and Lemes how test were used to run the goodness of fit test for the model. Therefore, the Hosmer & Lemeshow test (Table 2) of the goodness of fit proposes the model is good fit to the data as \( p=0.279 \) which is greater than 0.1.

<table>
<thead>
<tr>
<th>Step</th>
<th>Chi-square</th>
<th>Df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9.810</td>
<td>8</td>
<td>0.279</td>
</tr>
</tbody>
</table>

Source: Research Findings (2022)

c) **Omnibus Test of Model Coefficients**

The omnibus test of model coefficients tests whether the model is statistically significant and can further be interpreted. From the fact that the model has a \( p \)-value of 0.000 (Table 4.2.2) which below 0.05 this suggests that the model is statistically significant and can further be used for estimations since the overall model is statistically significant; \( \chi^2(3)=59.465 \; \; p <0.05 \) as indicated on table 4.

<table>
<thead>
<tr>
<th>Step</th>
<th>Chi-square</th>
<th>Df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9.810</td>
<td>8</td>
<td>0.279</td>
</tr>
</tbody>
</table>

Source: Research Findings (2022)
d) Logistic Regression Model Summary

Table 4.4 explains the variance in the model; in this case the model explains 71.2% (Nagelkerke R Square) of the variations in customer satisfaction while 28.8% variations of customer satisfaction are explained by other variables than mobile banking. Results areas indicated on Table 4 below;

<table>
<thead>
<tr>
<th>Step</th>
<th>2Log likelihood</th>
<th>Cox &amp; Snell R Square</th>
<th>Nagelkerke R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>40.166</td>
<td>0.452</td>
<td>0.712</td>
</tr>
</tbody>
</table>

Source: Research Findings (2022)

Table 5: Logistic Regression Results on the influence of Information Service and Customer Satisfaction

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank balance inquiry(IS1)</td>
<td>2.354</td>
<td>0.504</td>
<td>21.817</td>
<td>1</td>
<td>0.001</td>
<td>10.530</td>
</tr>
<tr>
<td>Bank statement request(IS2)</td>
<td>1.587</td>
<td>0.744</td>
<td>4.550</td>
<td>1</td>
<td>0.033</td>
<td>4.887</td>
</tr>
<tr>
<td>Cheque deposit inquiry(IS3)</td>
<td>0.211</td>
<td>0.077</td>
<td>7.448</td>
<td>1</td>
<td>0.005</td>
<td>1.235</td>
</tr>
<tr>
<td>Receipts and Payments confirmation(IS4)</td>
<td>6.185</td>
<td>2.333</td>
<td>7.031</td>
<td>1</td>
<td>0.008</td>
<td>4.102</td>
</tr>
<tr>
<td>Constant</td>
<td>-8.873</td>
<td>2.648</td>
<td>11.233</td>
<td>1</td>
<td>0.001</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Source: Research Findings (2022)

The study obtained similar findings from interviews, findings of the study revealed that apart from transaction services through mobile money services, the platform also offers information service on whatever is happening from the customer’s bank account. Likewise, a customer is able to inquire anything from the account through a mobile phone. One of the respondents commented;

“Mobile money doesn’t offer transaction services only, it also offers information services; the registered customers are able to see anything happening in their bank accounts; they can also inquire anything they wish to know from their bank accounts at anytime and anywhere without visiting the banking all” ……(CRDB-Chamwino Branch, January, 2022).

Findings also reveal that customers may inquiry about the balances at their bank accounts, unlike those who are not using mobile banking services where they have to visit the bank. Customers can also get their bank statements through their mobile phones. Other services such as confirmation of receipts and payments are also available through mobile money services. One the respondent responded;

“Before the introduction of mobile money services customers had to visit the bank for information from their bank accounts. However, after the introduction of mobile money services, all the information services can be obtained through a mobile phone. Customers may inquire about their bank balances; bank statements and they can confirm various transactions through their mobile phones” (CRDB-Chamwino Branch, January, 2022).

“I can check my account balance in any place any time wherever aim especially on salary session without visiting the banking hall.”

Findings are not far from other researchers where (Yousuf, 2017) piloted a study on the impact of electronic banking on customers satisfaction in Ethiopian banking industry (The Case of Clients of Dashen and Wogagen Banks in Gondar City). The study revealed that mobile banking services such as transactions (saving)and information.

According to Khot (2019), whose study address on customer’s satisfaction to wards mobile banking services. The Reserve Bank of India has made Mobile banking services accessible to all bank customers regardless of the mobile network. Through mobile banking customers can now add as many receivers in the list as they poverty for fund transfer (Amiri & F, 2012). Also, the investigator found that mobile speculation blackboard is very casual to understand and circle, mobile banking delivers earlier services, it is
informal to make broadcast funds, it is informal to make an equilibrium appraisal and less grade of risk in practice of mobile investment group it results. Mobile investment that influences customer gratification the most, as well as smallest making it informal to transact deprived of delays hence limits of time limits.

V. Conclusion and Recommendations

Mobile banking transaction service are found to have a positive effect on the customer satisfaction and therefore the research establishes that the transaction services provided (convenient funds transfer, bills payment, funds withdrawal) by mobile banking technology positively contributes to the level of customer satisfaction. It can also be established that there are convenient transaction services through mobile banking service and positively enhances the satisfaction of customers (Balogun et al., 2013).

Tanzanian Commercial banks should accommodate customers who frequently wire money transfers across countries and therefore increase their satisfaction. Consequently, the challenges for mobile banking information services (such as network problems) should be observed and dealt with so that customers enjoy the services perfectly.

References Références Referencias

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Study of Consumers Satisfaction Regarding Fast-Food Restaurants in Cameroon

By Bomi Juliet Sama

Abstract- The main objective of this research is to investigate the consumer satisfaction in the context of booming fast-food industry of Cameroon. More precisely, we break the satisfaction concept into different constructs, atmosphere satisfaction, menu satisfaction and global satisfaction, based on the different drivers of satisfactions; we then evaluate the influence of atmosphere satisfaction and menu satisfaction on global satisfaction as well as the impact of the three dimensions of satisfaction on consumers loyalty. The researcher also evaluated the moderator role of global satisfaction on the relationship linking atmosphere and menu satisfaction to loyalty. The study results indicated that fast-food menu and the atmosphere satisfaction have a positive effect on global satisfaction. As well, out of the three dimensions of satisfaction, global and menu satisfaction proved to have a positive impact on consumer loyalty, but effect of the atmosphere satisfaction proves to be not determinant. In addition, the mediator role of global satisfaction proved to be relevant.

Keywords: consumers satisfaction, fast-food, cameroon.

GJMBR-E Classification: DDC Code: 381 LCC Code: HF5415.3

Strictly as per the compliance and regulations of:
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I. Introduction

There have been abundant researches investigating consumer satisfaction in services industry. For over forty years, an increasing interest aroused on consumers satisfaction with regard to services. Many authors have contributed to the advancement of the research; namely Howard and Sheth (1969), Litifi, M. and Ghardi, J.E. (2012), Ekinicci, and Sirakaya, (2004), Cadotte and Turgeon (1988) or more recently the work of Bartikowski, and Llosa, (2004) highlighted the different interactions affecting the degree of customer satisfaction, (Camelis, et al, 2017).

The attention directed to service industry such as fast-food is due to the improvement in the level of consumer satisfaction, driven by the increasing importance of that sector. It is worth mentioning that, in that industry, differentiation is required in order to gain market shares, as the industry products are highly homogeneous and the firms can only compete through service quality maximization.

Many studies have directed their attention on the importance of service quality on consumers satisfaction and loyalty. However, most of these studies were based on developed and emerging countries, but not on sub-Saharan African countries; furthermore, these works did not consider the different components of satisfaction. (Soriano 2012; Ladharai et al, 2017; Ajina et al, 2015).

Hence, this research investigates the consumer satisfaction in the context of booming fast-food industry of Cameroon.

More precisely, we break the satisfaction concept into different constructs, atmosphere satisfaction, menu satisfaction and global satisfaction, based on the different drivers of satisfaction; we then evaluate the influence of atmosphere satisfaction and menu satisfaction on global satisfaction as well as the impact of the three dimensions of satisfaction on consumers loyalty. The researcher also evaluated the moderator role of global satisfaction on the relationship linking atmosphere and menu satisfaction to loyalty.

The study result indicated that fast-food menu and the atmosphere satisfaction have a positive effect on global satisfaction. As well, out of the three dimensions of satisfaction, global and menu satisfaction proved to have a positive impact on consumer loyalty, but effect of the atmosphere satisfaction proves to be not determinant. In addition, the mediator role of global satisfaction proved to be relevant.

The remaining of this document is as follow. After presenting a brief literature review on the satisfaction construct, we developed the hypothesis and the conceptual model. The methodology is then presented, before moving to the results presentation. Finlay, a conclusion and recommendations are proposed.

II. Literature Review

Research on consumers satisfaction has made significant progress in recent years in terms of insightful results produced. The subject is even considered as been the cornerstone of marketing (Peterson and Wilson 1992, cited in Bourgeon-Renault, Cova and Petr, 2006). If originally, the construct of satisfaction emanated from the labor field and was defined as "a way of rewarding an individual for a job" (Homans 1961), it is above all the work of Howard and Sheth (1969) or even Oliver (1980) who introduced this construct to the marketing field. From now on, satisfaction can be glimpsed from different points of view.

Hence, some researches have defined satisfaction as a result of a consumption experience (Cardozo 1965; Oliver, 2014; Evrard, 2006). Other studies have related the concept of satisfaction more closely with consumer behavior (Mihaela, O.O.E., 2015). Finally, Oliver (2010), meanwhile, suggests a four-step
process leading to satisfaction. According to that author, satisfaction is related to three constructs: performance, expectations and disconfirmation. This last contribution gives the construct of satisfaction an emotional dimension and makes its theoretical contribution one of the first explanatory models of this dimension in marketing.

a) The Transactional Approach of Satisfaction

Many studies have defined satisfaction from the transactional perspective. In that approach, satisfaction is considered as “a subsequent state inherent to a specific transaction, limited in time” (Audrain-Pontevia 2016). A similar definition was already proposed by, Lee and Kim (2017) by including perception and stating that “customer satisfaction measures the perception of what he actually enjoys from goods or service consumption, in comparison with his expected satisfaction when consuming a similar goods or service. In other words, the proponents of this approach suggest that the consumer assesses goods or services from the experience gained from their consumption; the latter measuring satisfaction by the difference between the experience and its initial expectations. Javed. and Cheema. (2017).

Faced with this static approach, which only considers the consumer experience toward the product or service provider; another perspective is based on the relational approach. According Ngobo (2017), the measurement of satisfaction in a relational perspective is defined as being a “continuous global evaluation of the ability of the company or the brand to provide the benefits sought by the customer”. Hence many viewpoints need to be accounted when defining satisfaction. This is what Garbarino and Johnson (2008) highlighted when defining satisfaction as “a cumulative construct, summing up satisfaction gained from specific products or services of the company”. This is a more recent approach to measure the consumer satisfaction construct.

b) Satisfaction in the Restaurant Industry

There have been abundant research investigating consumer satisfaction in the restaurant industry. Among them, the study by Soriano (2019) based on a sample 3,872 consumers, concluded that the most important determinants of the consumer choice of a restaurant were the food quality, namely freshness of the product, shape, variety of menus and quantity of food served; as well as the service quality, price and the atmosphere of the restaurant. These dimensions provide insight on the most relevant factors of consumer loyalty in relation to their degree of satisfaction.

Suhartanto et al, 2019. also revealed the relationship between the traditional constructs on which satisfaction is defined, namely; food quality, atmosphere, quality of facilities and the likelihood of visiting the restaurant by consumers. The food quality was found to significantly influence the respondent behavior toward returning to the restaurant in the same study.

In a cross-cultural analysis applied on a sample of 5136 consumers from 4 different countries (Scotland, Jamaica, United States and Wales), Omar et al (2016) evaluated the satisfaction of fast-food restaurant chains (McDonald’s, Burger King, KFC, etc.). Their study finding revealed that, the consumer satisfaction was mainly driven by the relationship with the restaurant staff as well as the quality of the facilities. Menvielle (2006), meanwhile, evaluated the different variables of satisfaction and the consumer loyalty, using a sample of 262 consumers in the Quebec region, the study finding revealed that, food quality explains the consumer's likelihood of returning to the restaurant. The results are in line with the finding by Tripathi, G., (2017) that the food quality is an important determinant explaining consumer satisfaction in restaurant.

Jaill et al, (2016) made a ranking of the key factors influencing the consumer satisfaction of in the hospitality industry. Their study results indicate that the critical factors determining the consumer satisfaction was found to be the courtesy of staff, the price and the food quality, however, their study did not provide evidence of impact of the environmental factors.

From the above development, we can conclude that the consumer satisfactions are apprehended by many variables that we will be including in our conceptual framework.

III. Hypothesis and Conceptual Model

Our conceptual model is based on the relational approach, which aim is to understand which dimensions of satisfaction matters the most to consumers and motivate them to eat in a fast food. To this end, we have divided the relationship between a consumer and the service provider into three stages:

- A pre-transactional stage based on consumer choice and decision-making criteria,
- A transactional stage during which there is an exchange between the two parties and an assessment of tangible aspects by the consumer,
- A post-transaction step, allowing the consumer to make an assessment of their experience and to estimate the degree of frequentation of the restaurant in the future.

The pre-transaction stage refers to the initial approach that a consumer follows in the purchasing relationship with a company. Before any relationship, the consumer assesses the value he can benefit from the relationship that links him with the service provider. Thus, the consumer identifies some key elements that will allow him to assess the quality of the product that will be offered to him later in the relationship. This is how the
sound environment or the decoration come into play at this level. According to some authors, they even constitute a fairly significant element of differentiation from the competition (Belman 2004; Pratminingsih, et al 2018). Finally, the waiting time before being able to sit down to eat, is as well, according to Soriano (2002), a critical factor for choosing a restaurant or not.

Regarding the transactional stage, the consumer must make choices of the menus while considering the best quality/price ratio in order to properly evaluate the service provided by the fast-food. The food quality and the freshness are crucial elements determining the consumers return to the restaurant (Nadzirah, S, et al 2013). Although many of the studies conducted in the hospitality industry have been emphasizing indoor restaurant service quality, it is also worth mentioning that the delivery service quality is also a major factor determining the consumer satisfaction in the fast-food restaurant. Hence, similar to Soriano (2002) we also consider that dimension in this stage. Finally, the other aspects that we can consider in this transactional stage concern the price-quality ratio of the menu. Offering a quality menu is not enough to achieve the consumer satisfaction, this needs to be in line with the price, the restaurant atmosphere or the cleanliness (Soriano 2002). Consumers are looking for value and constantly desire higher value for their desired menu (Klara 2012).

We thus formulate the hypothesis that:

**H 1:** consumer satisfaction toward the fast-food menu positively influences the global satisfaction

As already said, the consumer assesses the value of the benefit he will enjoy from eating in the fast-food restaurant. This allows him to make an idea of the quality of the product that will be offered to him. This is how the restaurant atmosphere; decoration plays a key role at this level. According to Liljander and Strandvik (2020) the emotional variables associated to the restaurant atmosphere creates an emotion on the consumer that will affect its satisfaction level. Some researches claim that, they even constitute a fairly significant element of differentiation from the competition (Belman, 1996; Chen, Y., 2014). Hence, we posit that:

**H 2:** Satisfaction toward the restaurant atmosphere positively affect the global satisfaction

Similar to the relational approach to satisfaction, we measured the effects of satisfaction on loyalty. More precisely, we refer to the work of Soriano (2002), Sulek and Hensley (2004), Gilbert et al. (2004), Menvielle (2006) and Andaleed and Conway (206). These works provide evidence supporting that, the more consumers are satisfied with the service provider, the more likely they will come back to him. This long-term relationship has been also proven in the marketing empirical literature (Anderson and Sullivan, 1993; Tanveer, Zoyia, and Rab Nawaz Lodhi (2016); Yi, 1997). We also consider these elements in the post-transaction stage and two dimensions were thus proposed, namely the probability of returning to the restaurant and the probability of recommending the restaurant. These considerations allowed us to formulate the following set of hypotheses:

**H 3:** Satisfaction toward the menu positively influence loyalty

**H 4:** Satisfaction toward the restaurant atmosphere has a positive influence on loyalty

**H 5:** Global satisfaction has a positive influence on loyalty

Finally, we also consider the possible moderating role plays by the overall satisfaction on the relationship between consumer satisfaction, and loyalty. Namely, we posit that:

**H 6.a:** Global satisfaction is a mediator in the relationship between satisfaction toward the menu and loyalty

**H 6.b:** Global satisfaction is a mediator in the relationship between satisfaction regarding the company atmosphere and loyalty

From the above development, we provide the representation of both the transactional approach representation as well as the conceptual model.
Our research model therefore considers all these dimensions from a relational approach and is presented as follows:

**Figure 1: The Transactional Approach Representation**

- **Pre-transactional**
  - Waiting time
  - Cleanliness
  - Decoration
  - Background music
  - Attendance
  - Atmosphere

- **Transactional**
  - Helpfulness
  - Variety of menus
  - Health aspects
  - Product presentation
  - Product freshness
  - Food quality
  - Food quantity
  - Value for money
  - Offers

- **Post transactional**
  - Probability to return to restaurant
  - Likelihood to recommend restaurant

Our research model therefore considers all these dimensions from a relational approach and is presented as follows:
Figure 2: Conceptual Model

- Global Satisfaction
- Global Satisfaction Experienced
- Menu Satisfaction
- Loyalty
- Atmospheric Satisfaction
- Likelihood of revisit
- Likelihood to recommend friends
- Frequentation
- Music
- Decoration
- Quantity
- Freshness
- Menu variety
- Waiting times

Study of Consumers Satisfaction Regarding Fast-Food Restaurants in Cameroon
IV. Empirical Analysis

Our study objective was achieved using data collected from a survey. Precisely, we used a self-administered questionnaire online and offline to collect data from some college students in Cameroon. The selection of students as target population was driven by the fact that, they constitute one of the major segments in the fast-food in Cameroon. From this data collection process, the researcher was able to test the conceptual model using a sample of 621 students.

The measuring scales were designed following the procedure of Churchill (1979). For our exploratory phase, we generated a set of items by referring to the existing literature, namely pre-existing scales taken from the literature on consumer satisfaction and loyalty in the fast-food industry. The measurement scales used in this research are similar to those adopted by Gilbert et al. (2004) who investigated the consumer satisfaction in the fast-food industry.

Prior to testing the hypothesis, we first performed the internal consistency analysis using the Cronbach test, we also applied the exploratory factor analysis. The objective of this analysis was to investigate how closely related are the set of items found in each construct, and to reduce the data into a smaller set of summary variables, prior to making the regression analysis. The Varimax rotation based on the maximization of the correlation coefficients of the most correlated variables was suitable in our case since the regression assumes the independence of the explanatory variables (Hair et al., 1998). We refer to the Kaiser’s rule (1958) to determine the number of factors to extract. Hence, only the factors whose eigenvalue was greater than 1 were retained. The percentage of explained variance ensures that the factors explain a minimum of variance. In social sciences, the minimum percentage variance should be 60% (Hair et al., 1998). As for the exploratory factor analysis, the minimum variance threshold for interpreting the factors is 0.3. (Gorsuch 1974; Leary 1995).

In the tables presenting the loadings of the items on each factor, we only presented the loadings greater than 0.30 for the sake of reliability. We retained the items strongly correlated with a single factor and whose factorial weight was greater or equal to 0.5. Items with commonality less than 0.5 were eliminated by successive iterations.

Regarding the different dimensions of satisfaction and overall satisfaction, the respondents were asked to give the opinion on their satisfaction regarding the fast-food. Based in the Likert scale of 1 to 5 (1-not satisfied at all, 5-very satisfied). As well, concerning the behavioral intentions, the respondents were asked to give their opinion on the likelihood of returning in the fast-food or recommending the fast food to someone in the near future, we also used the Likert scale of 1 to 5 (1-not at all likely, 5-very likely).

The internal consistency analysis of the model was validated by the Cronbach’s alpha test. The results of this internal consistency (ACP, Cronbach test and Varimax) are shown in the bellow (table 1)

<table>
<thead>
<tr>
<th>Table 1: Internal Consistency Analysis Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Items</td>
</tr>
<tr>
<td>F1</td>
</tr>
<tr>
<td>F2</td>
</tr>
<tr>
<td>- Waiting Time</td>
</tr>
<tr>
<td>- Helpfulness</td>
</tr>
<tr>
<td>- Variety Of Menus</td>
</tr>
<tr>
<td>- Food Quality</td>
</tr>
<tr>
<td>- Health Aspects</td>
</tr>
<tr>
<td>- Product Freshness</td>
</tr>
<tr>
<td>Menu Presentation</td>
</tr>
<tr>
<td>- Food Quantity</td>
</tr>
<tr>
<td>- Menu Price Ratio</td>
</tr>
<tr>
<td>- Promotions</td>
</tr>
<tr>
<td>- Music</td>
</tr>
<tr>
<td>- Cleanliness</td>
</tr>
<tr>
<td>- Cleanliness</td>
</tr>
<tr>
<td>- Decoration</td>
</tr>
<tr>
<td>Frequentation</td>
</tr>
<tr>
<td>Global Atmosphere</td>
</tr>
<tr>
<td>- Promotions</td>
</tr>
<tr>
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</tr>
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</tr>
<tr>
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</tr>
<tr>
<td>- Decoration</td>
</tr>
<tr>
<td>Frequentation</td>
</tr>
<tr>
<td>Global Atmosphere</td>
</tr>
</tbody>
</table>
The alpha value must be at least 0.7 for confirmatory factor analysis (Hair et al., 1998). In the case of exploratory factor analysis, it is considered acceptable if it is between 0.5 and 0.7 (Nunnally 1978). We have therefore adopted a minimum threshold of 0.5.

The principal component analysis of the different dimension of satisfaction, performed using SPSS 13.0, revealed a two-dimensional structure, accounting for more than 45% of the total variance at the global level. Precisely, the analysis suggests that, the satisfaction coming from the restaurant menu account for (34.988% of total explained variance), while the satisfaction due the restaurant atmosphere represents (10.671% of total explained variance).

Similarly, the internal consistency of the constructs related to global satisfaction and reliability (loyalty) was also performed through successive iterations scales. From this process, we retain one-dimensional structure of each of the scales considered. However, this approach has led to the removal of many items with poor loadings. the constructs related to the overall satisfaction and loyalty have also been represented by two items.

We also examined the possible relationship between the different dimensions of satisfaction, global satisfaction as well as loyalty, in this case, the internal consistency was evaluated through the computation of rho proposed by Jöreskog (1971). As well the exploratory factor analysis also supports the reliability of our constructs with indices $\rho_j$ greater than 0.65 (Table 2).

### Table 2: Reliability of the Constructs

<table>
<thead>
<tr>
<th></th>
<th>Alpha de Cronbach (nb d'items)</th>
<th>Rhô de Joreskog</th>
</tr>
</thead>
<tbody>
<tr>
<td>Menu. Sat</td>
<td>0.662 (4 items)</td>
<td>0.673</td>
</tr>
<tr>
<td>Atmosphere. Sat</td>
<td>0.691 (3 items)</td>
<td>0.664</td>
</tr>
<tr>
<td>Global Sat</td>
<td>0.752 (2 items)</td>
<td>0.754</td>
</tr>
<tr>
<td>Loyalty</td>
<td>0.809 (2 items)</td>
<td>0.727</td>
</tr>
</tbody>
</table>

### a) Hypothesis Testing

From our conceptual model we were supposed to investigate two issues: the influences of the different dimensions of satisfaction on the overall satisfaction and loyalty, as well as the possible moderating role of overall satisfaction on the relationships between the dimensions of post-transaction satisfaction and loyalty. The results of the regressions analysis indicates that, there is a positive and significant impact of the two dimensions of pre-transactional satisfaction (satisfaction coming from the menu offered and the restaurant atmosphere) on overall satisfaction. This is in line with the assumptions made that, overall satisfaction is mainly explained by pre-transaction satisfaction with attributes related to the menu proposed and the fast-food atmosphere. Hypotheses H1 and H2 are therefore validated.

The analysis results also show a significant positive influence of overall satisfaction on loyalty, which supports the results of the existent literature. Finally, the research outcome revealed some influence of the components of pre-transaction satisfaction on loyalty. Precisely, the results indicates that, the satisfaction resulting from the restaurant atmosphere has no significant influence on loyalty.

- while the satisfaction resulting from the menu offered positively and significantly affects loyalty.
In order to expand our analysis, we sought to understand the possible moderating nature of overall satisfaction on the relationships between the dimensions of satisfaction and loyalty.


Therefore, the mediating role of global satisfaction was tested using the three-step procedure of Baron and Kenny (1986), which uses three independent regression analyses. This approach proves the existence of mediation by demonstrating that:

- The independent variables affect the mediator,
- The independent variables have significant effect on the dependent variables,
- The mediator influences the dependent variable.

In other words, the path between the independent and dependent variables should be less significant than the path between the mediator and the independent variables. Mediation is considered total when the influence of the independent variable on the dependent variable disappears completely in the presence of the mediating variable and that between the mediator and the dependent variables remains highly significant.

When the influence of the mediator on the independent variable is simply insignificant, we are then in the case of partial mediation. In cases of partial mediation, only part of the effect of the independent variable on the dependent variable is exerted through the mediating variable and the other part is exerted directly on the independent variable, or possibly, through another variable not taken into account in the model.

From the previous analysis, we established that the two dimensions of satisfaction significantly and positively influence overall satisfaction, our mediating variable. The latter has a positive and significant influence on loyalty, that stands for the dependent variable.

Concerning the direct influences of the dimensions of satisfaction on the dependent variable, we previously observed differentiated effects according to the explanatory variable considered; namely,

- The satisfaction deriving from the restaurant atmosphere have not significant influence on loyalty, hence we can conclude that, there is a total mediating role of global satisfaction on the relationship linking satisfaction towards the atmosphere and loyalty:
- Satisfaction coming from the menu have a significant and positive influence on loyalty, we therefore proceeded to test a possible partial mediation, via overall satisfaction. The results of the test revealed that overall satisfaction is therefore a partial mediator in the atmosphere satisfaction–loyalty relationship.

According to Fornell, Lorange and Roos (1990), the total effect of one variable on another is the sum of the direct effect and the indirect effect. The analysis of the total effects revealed that overall satisfaction is the variable that exerts strongest influence on loyalty. It is also worth mentioning that satisfaction coming from the menu has a strong positive influence, both directly and indirectly, via overall satisfaction, on loyalty.

### Table 3: Results of Hypothesis Test

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Influence de</th>
<th>Coeff.</th>
<th>T</th>
<th>Sig.</th>
<th>Concl.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Satisfaction</td>
<td>Sat menu</td>
<td>0.386</td>
<td>6.909</td>
<td>0.019</td>
<td>S</td>
</tr>
<tr>
<td>Global Satisfaction</td>
<td>Sat Atmosphere</td>
<td>0.193</td>
<td>3.867</td>
<td>0.021</td>
<td>S</td>
</tr>
<tr>
<td>Loyalty</td>
<td>Global Satisfaction</td>
<td>0.717</td>
<td>14.418</td>
<td>0.022</td>
<td>S</td>
</tr>
<tr>
<td>Loyalty</td>
<td>Sat Atmosphere</td>
<td>-0.045</td>
<td>-1.0664</td>
<td>0.246</td>
<td>NS</td>
</tr>
<tr>
<td>Loyalty</td>
<td>Sat Menu</td>
<td>0.244</td>
<td>4.806</td>
<td>0.013</td>
<td>S</td>
</tr>
</tbody>
</table>
Table 4: Direct, Indirect and Total Effect on loyalty

<table>
<thead>
<tr>
<th>Impact on loyalty</th>
<th>Direct Effect</th>
<th>Indirect Effect</th>
<th>Total Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sat Menu</td>
<td>0.243</td>
<td>0.277</td>
<td>0.520</td>
</tr>
<tr>
<td>Sat Atmosphere</td>
<td>-0.044</td>
<td>0.13725</td>
<td>0.093</td>
</tr>
<tr>
<td>Global Satisfaction</td>
<td>0.716</td>
<td>0.716</td>
<td></td>
</tr>
</tbody>
</table>

b) Goodness of the Fit

The size of our overall sample (621 individuals) allows us to use the structural equation method to test our hypotheses of direct links between variables. With this in mind, we used the Amos 4.0 software, with estimation by the maximum likelihood method and bootstrap procedure on 200 replications, to ensure the robustness of the results obtained.

Confirmatory factor analysis leads to confronting empirical data with hypotheses on the relationships between observed variables and latent variables (Evrard, Pras and Roux 2009). With this in mind, we selected certain indices that reflect the extent of the adjustment (adjustment indices) or the lack of adjustment (residuals) of the model (N’Goala 2003).

Given the size of our sample (n= 621), and based on the recommendations of the literature, we used the following indices to perform the goodness of fit analysis.

- NFI, NNFI, ILI, CFI and TLI. It is generally desirable that they be greater than 0.9 when the sample size exceeds 250 (Bollen and Long, 1993; Hu and Bentler, 1995).

We also rely on Gamma 1, Gamma 2, RMR and RMSEA and Chi-square/ degree freedom indices to check the adjustment of the models tested. We decided not to retain neither the Chi-square, which is too sensitive to the size of the sample, nor the GFI and AGFI indices, considered less reliable than the Gamma1 and Gamma2 indices, because they are too sensitive to the number of parameters to be estimated (Roussel and 2002).

The Chi² value adjusted according to the number of degrees of freedom (Chi²/dd) must generally be less than 5. It is advisable to carefully observe the residuals and especially the RMSEA in order to have a more precise indication of the degree of freedom.

The RMSEA is considered suitable when it is close to 0.05, acceptable below 0.08 and unacceptable above 0.1 (Browne and Cudeck 1993). These elements are presented in Table 6 below.

Table 5: Post Estimation Analysis

<table>
<thead>
<tr>
<th>Threshold</th>
<th>Chi² Square</th>
<th>Gamma 1</th>
<th>RMR</th>
<th>RMSEA</th>
<th>NFI</th>
<th>NNFI</th>
<th>Chi²/dd</th>
<th>IFI</th>
<th>TLI</th>
<th>CFI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Results</td>
<td>124.78</td>
<td>&gt;0.9</td>
<td>&gt;0.9</td>
<td>&lt;0.1</td>
<td>&gt;0.9</td>
<td>&gt;0.9</td>
<td>&lt; 5</td>
<td>&gt;0.9</td>
<td>&gt;0.9</td>
<td>&gt;0.9</td>
</tr>
<tr>
<td></td>
<td>0.988</td>
<td>0.979</td>
<td>0.049</td>
<td>0.043</td>
<td>0.94</td>
<td>0.94</td>
<td>3.299</td>
<td>0.97</td>
<td>0.94</td>
<td>0.96</td>
</tr>
</tbody>
</table>
V. Conclusion

Through this research, we wanted to study the consumer satisfaction with regard to the fast-food industry in Cameroon and precisely, the dimensions that can explain consumer satisfaction when visiting a fast-food type restaurant. The study result indicated that fast-food menu and the atmosphere satisfaction have a positive effect on global satisfaction. As well, out of the three dimensions of satisfaction, global and menu satisfaction proved to have a positive impact on consumer loyalty, but effect of the atmosphere satisfaction appeared to be not determinant. In addition, the mediator role of global satisfaction proved to be relevant. As for the factors affecting satisfaction in general, food appeared to be the most crucial dimensions when consumers evaluate the satisfaction attached to the meal, over the others factors. Our contribution is innovative insofar as it extrapolates the studies on consumer satisfaction that we mentioned in our literature review. We brought to light new dimensions, in particular the importance of the atmosphere of the fast-food, and validated almost all of the hypotheses evoked. Therefore, we can affirm that our contribution should be useful for other studies which will, at least, corroborate our assertions. These results deepen the conclusions of some previous studies (in restaurants with service), by insisting more on the concepts attached to food (quality, quantity of food).

Finally, regarding loyalty, we confirmed that it was strongly linked to overall satisfaction. Moreover, loyalty is explained more by attitudinal loyalty (recommendation of the restaurant) than by behavioral loyalty (return to the restaurant). Be that as it may, in light of these results, consumers seem to have become aware of an important and rapidly expanding phenomenon in Africa, the search for quality food is now becoming a major dimension. Therefore, fast-food companies in Cameroon need to sharpen their services quality in order to improve the consumers satisfaction in all aspects and guarantee by the way their royalty.

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Determinants Impacting Impulse Buying of Green Beauty Products

By Takrima Jannat
Bangladesh University of Professionals

Abstract- In Bangladesh growing environmental consciousness has caused a substantial shift in the green product market during the past few years. Today's consumers are "thinking green" and are prepared to pay more for ecologically friendly goods. Impulse buying is one of the many diverse purchasing habits that consumers have. Impulse purchase or buy is any unplanned purchase made by a consumer. The research aims to discover and analyze the elements that influence consumers' impulsive purchases of green beauty products. The researched constructs were adjusted and confirmed by exploratory and confirmatory factor analyses. With the help of the statistical program Smart PLS 2.0, the study's paradigm was applied to the perspectives of 214 respondents in the city of Dhaka. According to the study's findings, perceived product benefits, environmental concerns, sales promotion, and peer pressure are all significantly positively associated with impulsive purchase behavior. Surprisingly, however, the notion of green trust and packaging has shown adverse effects. The study's result also assists past research studies in this field by validating the findings. The study will also aid green cosmetics marketers in creating successful marketing strategies by enabling them to understand better regarding many factors influencing consumers' perceptions and impulsive purchasing behavior.

Keywords: impulse buying, green beauty products, green perceived value and green trust.

GJMBR-E Classification: DDC Code: 809.9336 LCC Code: PN48

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Determinants Impacting Impulse Buying of Green Beauty Products

Takrima Jannat

Abstract- In Bangladesh growing environmental consciousness has caused a substantial shift in the green product market during the past few years. Today's consumers are "thinking green" and are prepared to pay more for ecologically friendly goods. Impulse buying is one of the many diverse purchasing habits that consumers have. Impulse purchase or buy is any unplanned purchase made by a consumer. The research aims to discover and analyze the elements that influence consumers' impulsive purchases of green beauty products. The researched constructs were adjusted and confirmed by exploratory and confirmatory factor analyses. With the help of the statistical program Smart PLS 2.0, the study's paradigm was applied to the perspectives of 214 respondents in the city of Dhaka. According to the study's findings, perceived product benefits, environmental concerns, sales promotion, and peer pressure are all significantly positively associated with impulsive purchase behavior. Surprisingly, however, the notion of green trust and packaging has shown adverse effects. The study's result also assists past research studies in this field by validating the findings. The study will also aid green cosmetics marketers in creating successful marketing strategies by enabling them to understand better regarding many factors influencing consumers' perceptions and impulsive purchasing behavior.

Keywords: impulse buying, green beauty products, green perceived value and green trust.

1. Introduction

Bangladesh has experienced a significant change in the market for green products over the past few years because of growing environmental awareness. Both customers' attitudes about desire to buy organic cosmetics and their opinions of the natural goods are favorable (Nguyen, Nguyen, & Vo, 2019). Organic skin care products have grown in popularity in Bangladesh as customers have become more aware of the benefits of self-care. Today's consumers are "thinking green" and are prepared to pay more for ecologically friendly beauty products. Knowing how customers behave is one of the critical goals for every organizational successes in today's challenging business market (Mubarak, 2020). Impulse buying is a fundamental consumer trait to research. Any purchase done on the spur of the moment is referred to as sudden and is unexpected and immediate (Chowdhury, 2020). Impulsive purchases might include everything from new products (both conventional and organic) to samples, and existing products. A lot of factors are responsible for impulse buying. Today, the majority of decisions regarding purchases are produced at the time of sale (around 70%) (Heilman, Nakamoto, & Rao, 2002).

Bangladesh has been developing considerably quicker recently, with an average annual GDP growth of more than 6.0 percent ($2,948 in 2013 in terms of PPP-adjusted GDP per person). The country's consumer behavior pattern has changed because of increased urbanization, rising family income, rising employment of women, and foreign direct investment (FDI) inflow. Bangladeshi consumers are more inclined to be willing to make purchases (Munir, Muehlstein, & Nauhbar, 2015).

Products that are used to enhance and improve one's appearance are known as green cosmetics/beauty products. Due to their greater availability and lack of side effects, herbal substances are preferred over chemical ones (Kaur, Singh, Singh, & Kaur, 2021). Powders, creams, face packs, moisturizers, lotions, shampoo, hair oils, hair conditioners, nail paint, and other items fall under the category of beauty products. Green products routinely feature environmental attributes, which are beneficial to humanity and the planet (Usrey, Palihawadana, Saridakis, & Theotokis, 2020). These green beauty products captivate and arouse the curiosity of both male and female consumers.

The market for skin care products in Bangladesh is anticipated to improve from $1.23 billion (in the year 2020) to $2.12 billion in 2027, with an average yearly rate of 8.1 percent between 2021 and 2027. The market for skin care products will gain $960 million in revenue between 2020 and 2027. "Meena Herbal" (a derivative of Bengal Herbal Garden Limited of Gemcon Group) was released in the market in 2007. In 2016, Neem Laboratories (Pvt.) introduced "Neem Original," which ACI acquired, and "Lever Ayush" by Unilever Bangladesh, which was launched in late 2018. The most recent release of "Aarong Earth" from Aarong, a brand owned by BRAC Bangladesh, with the motto "Come Back to Nature," confirms the sector's enormous potential.

In compliance with global sustainable development trends, an environmental movement is underway in the current consumer market. Conscious customers are choosing more ecologically friendly
items, a sign that the trend toward conscious purchasing is growing. (Driessen, Hillebrand, Kok, & Verhallen, 2013). Therefore, we can generate the study research questions as follows:

**RQ1:** What Factors do Contribute to Impulse Buying Regarding Green Beauty Products?

**RQ2:** What Considerations should Marketers Consider when Developing Tactics for Impulse Purchases of Green Beauty Products?

The objective of this study is to identify and rank the determinants affecting customers’ impulse purchases of green beauty products. In addition, this paper also aims to discover the degree of influence of factors to impulse buying of green cosmetics in Dhaka City.

**II. Literature Review**

An impulse purchase is a rising idea that is crucial to boosting sales, particularly in supermarkets. In this competitive era, businesses must comprehend consumer behavior (Akyuz, 2018). Impulse shopping is defined as shopping for products or items without making a list before visiting a store (Talukdar & Lindsey, 2013). When buyers have an unexpected, frequently strong need to buy something instantly, which is known as impulse buying. To comprehend the elements affecting impulse purchases, academic researchers and professionals have performed several studies (Lim & Yazdanifard, 2015). A variety of factors, including consumer characteristics, shopping experience, environmental factors, and cultural factors, have positive impact on impulse shoppers (Muruganantham & Bhakat, 2013). Once more, the shopper's unplanned purchasing behavior is inspired by a variable that may be connected to the retail setting, customer characteristics, product features, diverse demographic, and sociocultural dimensions.

Consumers may prefer sustainable products because they perceive products with green attributes to be more effective than conventional alternatives. Due to the importance of green characteristics in evaluating the overall performance of products, there exist numerous studies exploring the role of such characteristics in affecting consumer preferences as well as purchase intention (Luchs & Kumar, 2017). Consumers have positive sentiments about environmentally friendly items and even report being willing to pay more for them since moral behavior benefits everyone in society (Berger, 2019).

Humans have a tendency toward utilizing and purchasing products that are natural and organic, such as food, clothing, and toiletries. Product attributes are associated with a consumer's propensity to make an unplanned buy during grocery shopping and retail characteristics. Products with comprehensive label explanations and nutritional value are more well-liked by impulsive consumers (Kozup, Creyer, & Burton, 2003). Customers have positive attitude toward the desire to purchase organic cosmetics. Additionally, consumer awareness, product knowledge, safety considerations, and environmental protection consciousness all play significant roles in influencing consumers’ favorable attitudes toward green cosmetics (Nguyen et al., 2019).

Due to their lack of toxins and ease of decomposition, green beauty products are viewed as environmentally beneficial items (Wu, Zhou, & Chien, 2019). To develop organic consumption, environmental concern is therefore seen as the first step. Green cosmetic goods are more likely to be bought immediately and repeatedly by consumers whose attitudes are positively influenced by environmental concerns (Nguyen et al., 2019). A significant factor influencing purchasing behavior is the consumer's level of trust in eco-brands (Sewwandi & Dinesha, 2022). A vital indicator for the intention to buy green goods is the green trust (Tarabieh, 2021). Furthermore, the packaging has a significant influence on the consumer's choice to buy (Cahyorini & Rusfian, 2012).

Consumer purchasing behavior is also influenced by promotional tactics, including discounts, gifts, coupons, different schemes, price promotions, loyalty programs, gift packages, competitions, and prize packs. Sales promotion uses many incentive tactics, most of which are short-term, to encourage customers and, or retailers to complete their purchases faster or to make more sales (Kotler & Armstrong, 2010). On the other sides, the likelihood of purchase can also rise when several people are present (Luo, 2004). For instance, people tend to make more purchases in a group. Peer influence is significant in explaining green behavior, according to research on green purchasing (Khare, 2015).

Consumers’ impulsiveness toward green beauty products is high not only in Bangladesh but also worldwide. Green products are becoming more popular, and demand for them is expanding. The main factors driving spontaneous purchases of green cosmetics include product benefits, pricing value, promotions, and health benefits. Considering the current situation, this research is crucial for both green cosmetics manufacturers and retailers to understand the elements that influence consumers’ impulse buying behavior.

**III. Research Gap**

This study is crucial for both companies that manufacture green beauty products and retailers that sell them to consumers. Even though there have been numerous studies in this field, most of the study has concentrated on impulse purchases of foods, groceries, clothing, and other consumer goods rather than green beauty products. Additionally, we also identified gaps in the conceptual frameworks of several studies. There
have been no studies that particularly looked at these six factors (Perceived Product Benefits, Environmental concern, Green Trust, Packaging, Sales Promotions, and Peer Influences) to investigate customers' impulse buying tendencies for green beauty products as a group. As a result, there is a genuine empirical gap in the literature in this field.

IV. Conceptual Framework

Impulse buying is a prevalent aspect of consumer behavior, accounting for a substantial proportion of sales across various product varieties (Chowdhury & Mehjabeen, 2021). Over the years, although the impulse purchasing phenomenon has caused research interest, it is since the 1980s, that researchers have related impulse purchases with a focus on consumer characteristics, traits, and behavioral dimensions (Stern, 1962).

Figure 1: The Study's Conceptual Framework

a) Perceived Product Benefits

Product benefits are the values customers get by using a product to satisfy their needs minus associated costs. Many businesses are searching for methods to "fine-tune" their product mix with preserving diversity and unique products (Grocer, 2011). Some marketers now portray their goods as being healthy (Bublitz & Peracchio, 2015). Thus, humans have a tendency toward utilizing and purchasing products that are natural and organic. Customers have a positive attitude toward the desire to buy green cosmetics, as well as a positive perception of the environment. (Nguyen et al., 2019). Therefore, the study’s first hypothesis is:

H1: Perceived Product Benefits are Positively Associated with Impulse Purchase of Green Beauty Products.

b) Environmental Concern

Individuals concerned about the environment tend to focus more on the ingredients in products and the production method (Nguyen et al., 2019). Due to their non-toxicity and ease of decomposition, green cosmetics are viewed as environmentally beneficial goods (Van Loo, Diem, Pieniak, & Verbeke, 2013). To foster green consumerism, environmental concern is therefore considered as the first step. Ecological awareness is a fundamental step that leads to the purchasing of natural items with the aim of environmental protection (Smith & Paladino, 2010). Consumer attitudes about purchasing and repurchasing organic cosmetic goods are positively influenced by environmental concerns. In sum we can hypothesize follows:
H2: Environmental Concern is Positively Associated with Impulse Purchase of Green Beauty Products.

c) Green Trust

The best way to define trust is as “the ordinary person's willingness to believe in the product's capacity to achieve its purpose” (Chaudhuri & Holbrook, 2001). Trust suggests that customers are inclined to think favorably of the product. When evaluating trust in an air of expectation, the buyer wants to believe that the item is knowledgeable, responsible, and fair (Tarabieh, 2021). Trust is a psychological condition characterized by a willingness to embrace receptivity and a focus on constructive intentions (Foroudi, Nazarian, & Aziz, 2020). The definition of “green trust” is “a desire to rely on a commodity as a result of expectations regarding its environmental friendliness attributes” (Chen, 2010).

Furthermore, there is a strong correlation between the intention to make green purchases and green trust (Tarabieh, 2021). Therefore, our third hypothesis is:

H3: Green Trust is Positively Associated with Impulse Purchase of Green Beauty Products.

d) Packaging

Product marketing and distribution depend on packaging in many ways. According to (Deng, 2009). Customers scrutinize the packaging of food products, and it has been found that there is a direct link between packaging and consumer buying intent. Additionally, there was a clear association between packaging, customer loyalty, and buyer desire to make an instant buy (Khraim, 2011). The shopper's buying decision at the time of sale is significantly influenced by packaging design. It has been demonstrated that consumers' judgments of the product's visual heaviness are influenced by where the product image is placed on a package front. The impacts of package form on volume perception, packaging preference, choice, and consumption have recently been the focus of marketing researchers (Deng, 2009). In summary, the study's fourth hypothesis is:

H4: Packaging is Positively Associated with Impulse Purchase of Green Beauty Products.

e) Sales Promotion

A strategy that acts as a direct enticement is sales promotion, providing customers, salespeople, or resellers with additional benefits or incentives for a product (Nagadeepa, Selvi, & Pushpa, 2015). Sales promotions have a favorable impact on consumer behavior (Kotler & Armstrong, 2010). When supermarkets offer discounts and promotions, it becomes more affordable for customers. Products offered at a discounted price are incorporated in sales promotions during events and activities (Nagadeepa, Selvi, & Pushpa, 2015).

H5: Sales Promotion is Positively Associated with Impulse Purchase of Green Beauty Products.

f) Peer Influence

Peer effects, as it is commonly called in the research on economics and marketing, is a general phrase that illustrates how an individual’s views, values, or behaviors are impacted by those of others in their peer group (Hernández-Julían & Peters, 2018). Shopping with friends increases shoppers’ willingness to purchase. The likelihood of buying a product rises by more than 60% due to peer influence (Bapna & Umyarov, 2015). According to research, a shopper's relationships with their companions can have a substantial impact on their decision to make a green buy (Y. A. Kim & Srivastava, 2007). Therefore, the study’s last hypothesis is:

H6: Peer Influence is Positively Associated with Impulse Purchase of Green Beauty Products.

V. Research Methodology

The present research has conducted to identify the factors affecting impulse purchasing of green beauty products in Dhaka City. The study used a quantitative research approach. The population in this study were all customers in Dhaka who purchase green beauty products from various supermarkets, retail chains, shopping malls, and departmental stores. A simple random sampling technique is used to collect data. This research uses a research sample that amounted to 214 respondents. Any sample size greater than 200 is adequate for a practical data analysis (Hoe, 2008). For a sophisticated path model, 200 samples or even more are desirable (Kline & Rosenberg, 2010). A self-administrated structured questionnaire was provided to the respondents. All the constructs were measured by 5 points Likert scale (1- Strongly Disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly Agree).
### Table 1: Variable Names, the Number of Indicators and Research Adopted

<table>
<thead>
<tr>
<th>No.</th>
<th>Variable</th>
<th>The Number of Indicators</th>
<th>Research References</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Perceived Product Benefits (PB)</td>
<td>3</td>
<td>(Nguyen et al., 2019)</td>
</tr>
<tr>
<td>2</td>
<td>Environmental Concern</td>
<td>4</td>
<td>(Van Loo et al., 2013)</td>
</tr>
<tr>
<td>3</td>
<td>Green Trust</td>
<td>2</td>
<td>(Tarabieh, 2021)</td>
</tr>
<tr>
<td>4</td>
<td>Packaging</td>
<td>3</td>
<td>(Deng, 2009)</td>
</tr>
<tr>
<td>5</td>
<td>Sales Promotion</td>
<td>3</td>
<td>(Nagadeepa et al., 2015)</td>
</tr>
<tr>
<td>6</td>
<td>Peer Influence</td>
<td>3</td>
<td>(Bapna &amp; Umyarov, 2015)</td>
</tr>
<tr>
<td>7</td>
<td>Impulse Buying behavior</td>
<td>3</td>
<td>(Rook &amp; Fisher, 1995)</td>
</tr>
</tbody>
</table>

### VI. Data Analysis

#### a) Descriptive Data Analysis

### Table 2: Demographic Profile

<table>
<thead>
<tr>
<th>Description</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Description</th>
<th>Frequency</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td><strong>Occupation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>105</td>
<td>49.1%</td>
<td>student</td>
<td>93</td>
<td>43.4%</td>
</tr>
<tr>
<td>Female</td>
<td>109</td>
<td>50.9%</td>
<td>Businessmen</td>
<td>38</td>
<td>17.8%</td>
</tr>
<tr>
<td>Total</td>
<td>214</td>
<td>100%</td>
<td>service holders</td>
<td>73</td>
<td>34.1%</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td>housewife</td>
<td>6</td>
<td>2.8%</td>
</tr>
<tr>
<td>below 20</td>
<td>24</td>
<td>11.2%</td>
<td>others</td>
<td>4</td>
<td>1.9%</td>
</tr>
<tr>
<td>20-30</td>
<td>114</td>
<td>53.3%</td>
<td>Total</td>
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<td>100.0%</td>
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<td>58</td>
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<td>Income</td>
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<tr>
<td>41-50</td>
<td>17</td>
<td>7.9%</td>
<td>below 15000</td>
<td>60</td>
<td>28.0%</td>
</tr>
<tr>
<td>above 50</td>
<td>1</td>
<td>.5%</td>
<td>15001-30000</td>
<td>62</td>
<td>29.0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>15100-30000</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>30100-45000</td>
<td>60</td>
<td>28.0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>45100-60000</td>
<td>27</td>
<td>12.6%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Education</td>
<td>5</td>
<td>2.3%</td>
</tr>
<tr>
<td>below SSC</td>
<td>12</td>
<td>5.6%</td>
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</tbody>
</table>
Table 2’s demographic profile lists the respondents’ gender, age, level of education, occupation, and income. Male respondents made up 49.1% (n = 105) while female respondents made up 50.9% (n = 109), as shown by the frequency distribution in Table 2. In addition, 53.3% of respondents were between the ages of 20 and 30 (n = 114), whereas 27.1% were between the ages of 31 and 40 (n = 58). These findings would suggest that younger age groups are more likely than older ones to engage in impulsive purchasing. 43.5% of respondents are students (n = 93) and 34.1% are service members (n = 73). Most respondents (34.6%) had a high school diploma, 35.5% had a bachelor’s degree, and 18.2% had a master’s degree (n = 74). The respondents’ gender, age, education level, occupation, and income are listed in the demographic profile in Table 2. This result suggests that the respondents to the survey are well educated.

b) Multicollinearity Testing

The variance Inflation Factor is used to evaluate multicollinearity (VIF). A VIF score of larger than 5 indicates construct collinearity. Hence the value should be lower than 5.

<table>
<thead>
<tr>
<th>Construct Name and Items</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Product Benefits (PB)</td>
<td></td>
</tr>
<tr>
<td>PB1: I favor organic cosmetics because there are no adverse effects.</td>
<td>1.105</td>
</tr>
<tr>
<td>PB2: I think there are many health advantages to using green cosmetics that are made with the environment in mind.</td>
<td>1.295</td>
</tr>
<tr>
<td>PB3: I prefer green cosmetics because they don't contain synthetic coloring.</td>
<td>1.213</td>
</tr>
<tr>
<td>Environmental Concern (EC)</td>
<td></td>
</tr>
<tr>
<td>EC1: Because organic cosmetics are better for the earth, I buy them.</td>
<td>1.375</td>
</tr>
<tr>
<td>EC2: I like using disposable organic cosmetics since they are convenient.</td>
<td>1.820</td>
</tr>
<tr>
<td>EC3: Green items, in my opinion, do not hurt the environment.</td>
<td>2.087</td>
</tr>
<tr>
<td>EC4: I think using green items reduces pollution.</td>
<td>1.811</td>
</tr>
<tr>
<td>Green Trust (GT)</td>
<td></td>
</tr>
<tr>
<td>GT1: Green products' environmental commitments are, in my opinion, largely trustworthy.</td>
<td>1.010</td>
</tr>
<tr>
<td>GT2: In my experience, this product's environmental performance is generally reliable.</td>
<td>1.010</td>
</tr>
<tr>
<td>Packaging (PCK)</td>
<td></td>
</tr>
<tr>
<td>PCK1: I think colorful packaging encourages me to buy</td>
<td>1.473</td>
</tr>
<tr>
<td>PCK2: I buy green beauty products since I can reuse the attractive containers of the products.</td>
<td>1.624</td>
</tr>
<tr>
<td>PCK3: I’m tempted to buy by the attractive container of green cosmetics.</td>
<td>1.679</td>
</tr>
<tr>
<td>Sales Promotion (SP)</td>
<td></td>
</tr>
<tr>
<td>SP1: Price reductions, in my opinion, persuade me to buy green cosmetics.</td>
<td>1.469</td>
</tr>
<tr>
<td>SP2: When presents are provided, I like to purchase green cosmetics.</td>
<td>1.445</td>
</tr>
<tr>
<td>SP3: When shopping organic cosmetics, I like Buy One Get One Free (BOGOF).</td>
<td>1.129</td>
</tr>
<tr>
<td>Peer Influence (PI)</td>
<td></td>
</tr>
<tr>
<td>PI1: I frequently discuss eco-friendly cosmetics with my friends.</td>
<td>1.874</td>
</tr>
<tr>
<td>PI2: I frequently hear from friends about their familiarity with and first-hand knowledge of green products.</td>
<td>1.591</td>
</tr>
<tr>
<td>PI3: I frequently go shopping with my friends for green products.</td>
<td>1.821</td>
</tr>
<tr>
<td>Impulse Buying behavior (IBB)</td>
<td></td>
</tr>
<tr>
<td>IBB1: I prefer to make impulse purchases.</td>
<td>1.789</td>
</tr>
<tr>
<td>IBB3: I prefer impulse purchases on a regular basis.</td>
<td>2.019</td>
</tr>
<tr>
<td>IBB2: impulse purchases make me happy.</td>
<td>1.934</td>
</tr>
</tbody>
</table>

Source: Statistical Data Processing using PLS
According to the findings of the multicollinearity test presented in Table 3, there exists no collinearity in any of the construct because every item under each construct in the study model has a VIF value of less than 5.

c) Scale Validity, Reliability, and Assessment

Each construct, and the visual elements used in this study, were developed via examinations of the literature, and changed in response to the impulse buying habits of many consumers in Dhaka City. Exploratory factor analysis (EFA) and confirmatory factor analysis were used to enhance and validate the measurement scale (CFA). Before using the factor analysis, it has confirmed that the conditions of normality and linearity were upheld.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Items</th>
<th>Loadings</th>
<th>Cronbach’s Alpha (α)</th>
<th>Composite Reliability (CR)</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Product Benefits</td>
<td>PB1</td>
<td>0.583</td>
<td>0.561</td>
<td>0.772</td>
<td>0.535</td>
</tr>
<tr>
<td></td>
<td>PB2</td>
<td>0.809</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PB3</td>
<td>0.780</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Concern</td>
<td>EC1</td>
<td>0.658</td>
<td>0.804</td>
<td>0.871</td>
<td>0.631</td>
</tr>
<tr>
<td></td>
<td>EC2</td>
<td>0.835</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EC3</td>
<td>0.862</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EC4</td>
<td>0.806</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green Trust</td>
<td>GT1</td>
<td>0.607</td>
<td>0.179</td>
<td>0.701</td>
<td>0.546</td>
</tr>
<tr>
<td></td>
<td>GT3</td>
<td>0.851</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packaging</td>
<td>PCK1</td>
<td>0.745</td>
<td>0.770</td>
<td>0.849</td>
<td>0.656</td>
</tr>
<tr>
<td></td>
<td>PCK2</td>
<td>0.934</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PCK3</td>
<td>0.735</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales Promotion</td>
<td>SP1</td>
<td>0.837</td>
<td>0.646</td>
<td>0.808</td>
<td>0.589</td>
</tr>
<tr>
<td></td>
<td>SP2</td>
<td>0.844</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SP3</td>
<td>0.594</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer Influences</td>
<td>PI1</td>
<td>0.871</td>
<td>0.804</td>
<td>0.884</td>
<td>0.719</td>
</tr>
<tr>
<td></td>
<td>PI2</td>
<td>0.818</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PI3</td>
<td>0.853</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impulse Purchase Behavior</td>
<td>IBB1</td>
<td>0.855</td>
<td>0.830</td>
<td>0.898</td>
<td>0.746</td>
</tr>
<tr>
<td></td>
<td>IBB2</td>
<td>0.872</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>IBB3</td>
<td>0.864</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: AVE-Average Variance Extracted, CR-Composite Reliability.
If the average variance extracted (AVE) and the external factor loadings are more than 0.50, the explained variance will be larger than the measurement error in convergent validity (Fornell & Larcker, 1981). As a result, the computed values for the factor loadings are respectively 0.583 and 0.934, AVE in this study are and 0.537 and 0.746. (Table 4). The values of composite reliability (CR) (Raykov, 1997) and Cronbach's alpha, which are meant to estimate scale reliability with the recommended threshold criterion of 0.70 for both, are used to quantify the internal consistency of the (Nunnally, 1994). Cronbach's alpha values and composite reliability values, respectively, vary from 0.179 to 0.830 and 0.701 to 0.898, as shown in Table 4. The measurement model consequently demonstrates good construct validity and reliability.

Figure 2: Structure Equation Model

d) Hypothesis Test Result using SEM
Table 6 below shows the results of a hypothesis test using a structural equation model based on variance (SEM). The hypothesis is significant if the t-value is greater than 1.96 and the statistical significance is set at 5%.
Table 6: Hypotheses Test Results

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Coefficients (β)</th>
<th>Sample Mean (M)</th>
<th>Standard Deviation (STDEV)</th>
<th>T Statistics</th>
<th>P Values</th>
<th>Significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>PB -&gt; IBB</td>
<td>0.152</td>
<td>0.155</td>
<td>0.073</td>
<td>2.072</td>
<td>0.039</td>
<td>Significant</td>
</tr>
<tr>
<td>EC -&gt; IBB</td>
<td>0.304</td>
<td>0.307</td>
<td>0.077</td>
<td>3.920</td>
<td>0.000</td>
<td>Significant</td>
</tr>
<tr>
<td>GT -&gt; IBB</td>
<td>-0.013</td>
<td>-0.002</td>
<td>0.045</td>
<td>0.297</td>
<td>0.766</td>
<td>Not Significant</td>
</tr>
<tr>
<td>PCK -&gt; IBB</td>
<td>-0.042</td>
<td>-0.049</td>
<td>0.039</td>
<td>1.076</td>
<td>0.283</td>
<td>Not Significant</td>
</tr>
<tr>
<td>SP -&gt; IBB</td>
<td>0.176</td>
<td>0.174</td>
<td>0.051</td>
<td>3.428</td>
<td>0.001</td>
<td>Significant</td>
</tr>
<tr>
<td>PI -&gt; IBB</td>
<td>0.348</td>
<td>0.344</td>
<td>0.078</td>
<td>4.481</td>
<td>0.000</td>
<td>Significant</td>
</tr>
</tbody>
</table>

Note: T-Statistics and P-Values

The results of the first hypothesis test, which are shown in Table 6, show that consumer impulse purchases of green beauty products are strongly influenced by the perceived benefits of the product (β = 0.152, t-value = 2.072; p-value = 0.039; p-value is less than .05). H1 is consequently approved. Table 6 further shows that customers' environmental concerns have a significant impact on their spontaneous purchases of green beauty products (β = 0.304, t-value = 3.920; p-value = 0.000; p-value is less than .05). Therefore, H2 is approved. It may be said that H3 is disapproved based on the findings of the H3 test, which show that green trust has a negative relationship with impulsive purchases of green beauty goods with a value of (β = -0.013; t-value = 0.297; p-value = 0.766; p-value is greater than .05). H4 is likewise rejected based on the results of the test, which show that product packaging had no effect on customers' impulse purchases of green beauty products (β = -0.042, t-value = 1.076; p-value = 0.283; p-value is greater than .05). Based on the findings, (β = 0.176, t-value = 3.428; p-value = 0.001, p-value is less than .05) which are shown in Table 6 and demonstrate that sales promotions offered by marketers' impact customers' impulsive purchasing behavior regarding green cosmetics, the H5 is also accepted. The findings of the H6 test, which are shown in Table 6, indicate that peer influence is positively associated with customers' impulse purchases of green cosmetics with the value of (β = 0.348, t-value = 4.481; p-value = 0.000, p-value is less than .05). Accordingly, H6 is also accepted.

VII. Result and Discussion

The current study exhibits factors impacting consumer impulse purchase regarding green beauty products at various superstores/retail chains or supermarkets in Bangladesh's central region. The result of the first hypothesis test in this study shows that consumer impulse purchases of green beauty products are strongly influenced by the perceived benefits of the product (p-value < 0.05) (Table 6), which is also supported by other studies (Nguyen et al., 2019). Therefore, the advantages green cosmetics provide for users influence impulsive purchasing significantly. Marketers must concentrate on creating product values. The second hypothesis confirms that customers' environmental concerns have a significant impact on their spontaneous purchases of green beauty products (p-value < 0.05), which is also supported by (Van Loo et al., 2013). As the prevalence of impulse purchases rises, marketers are focusing heavily on environmental concerns. Marketing professionals should implement initiatives to raise environmental awareness. The third and fourth hypotheses show contradictory findings that green trust has a negative relationship with impulsive purchases of green beauty goods (p > .005) and product packaging did not affect customers' impulse purchases of green beauty products (p > .005). This finding contradicts earlier research (Tarabieh, 2021) and (Mubarak, 2020). Considering these findings, we can say people in Bangladesh are less trusting of green cosmetics. Marketers must reflect carefully on how to boost consumer confidence in sustainable and environmental cosmetics. The fifth hypothesis confirms that sales promotions offered by marketers' impact customers' impulsive purchasing behavior regarding green cosmetics. The result is also supported by previous studies (Nagadeepa et al., 2015). Marketers must provide consumers with time-worthy sales promotions. The sixth hypothesis shows that peer influence is positively associated with customers' impulse purchases of green cosmetics, which is also supported by (J. E. Kim & Kim, 2012). Retail marketers must develop a pleasant shopping environment for customers so that more people can travel together and influence one another.
VIII. STUDY IMPLICATIONS AND FUTURE RESEARCH

Consumers' impulsive buying behavior may be caused by a variety of circumstances, still, this study will give consumers a clear understanding of what variables are motivating them to buy green beauty goods impulsively. A further goal may be to investigate the effects of Bangladesh’s green beauty products marketing techniques. Retailers in Bangladesh will benefit from the findings of this research because they will have a better understanding of consumers' impulsive buying behavior, which will help them create effective marketing and merchandising strategies. The industry for beauty products in Bangladesh will be better understood by businesses with this information. In several significant areas, this study will offer theoretical additions to the literature on green marketing. Market managers of products with improved environmental performance will benefit from some of the information in the current investigation. Our findings will, first and foremost, offer some recommendations for businesses that decide to either capitalize on green products existing in their portfolios or incorporate green features into new products. This study will serve as an additional tool for research in this area.

IX. LIMITATIONS

Fundamental limitations persist despite meticulous study efforts; they might be solved by future scholars. The results cannot be extended to other regions or cities of the country due to differences in consumer behavior and financial capability. Another difficulty was gathering data from impulsive shoppers since the researcher did not visit many of the retail or superstore locations in Dhaka where customers locate or visit. Although there are many more factors that contribute to impulsive buying, the study develops a research framework with six extrinsic variables. It is required to include other intrinsic characteristics, such as interpersonal influence, consumer engagement, consumption habits, and the economic history of consumers in different regions of the country, to obtain more comprehensive insights.

X. CONCLUSION

Bangladesh’s demand for eco-friendly items has greatly expanded because of the country's growing environmental awareness. According to the Bangladesh Cosmetics and Toiletries Importers Association, 80 percent of cosmetics are produced in Bangladesh. All the rest are imports. People are purchasing green beauty products increasingly regularly, spontaneously, and impulsively, as a consequence of a variety of factors. As a result, to develop efficient marketing strategies, marketers must identify the possible reasons why consumers buy organic cosmetics on an impulsive basis.

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REFERENCES RÉFÉRENCES REFERENCIAS

Determinants Impacting Impulse Buying of Green Beauty Products


The Three Most Critical Aspects for Implementing Holistic Customer Experience at Scale

By Shashank Katare

Abstract- Businesses are increasingly challenged by increasing competition, changing customer preferences and, industry dynamics. Moreover, the proliferation of channels and customer touchpoints has added to the complexity of keeping up with these constant changes. Only organizations that are agile enough to understand, evaluate and react to these dynamic requirements can drive innovation and growth. Therefore, organizations must be creative in their consumer engagement strategy across the marketing funnel to enhance overall customer experience, measure the performance, and establish the loopback to refine the strategy. The following paper outlines concepts to help consumer businesses accelerate customer experience management. The objective of the paper is to lay out guiding principles that organizations can use as part of their business processes to create, deliver, and measure personalized customer experiences and drive growth, loyalty, and satisfaction. The paper will dive into the three most important pillars of building successful customer experiences – Design a Customer Experience Management Model, Activate across touchpoints, and Measure performance across touchpoints.

Keywords: customer experience, customer journey map, measurement, acquisition, personalization, strategy, user acquisition, growth funnel, CLV, NPS, churn, case study, customer satisfaction, consumer engagement.

GJMBR-E Classification: JEL Code: M31

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The Three Most Critical Aspects for Implementing Holistic Customer Experience at Scale

Shashank Katare

Abstract- Businesses are increasingly challenged by increasing competition, changing customer preferences and, industry dynamics. Moreover, the proliferation of channels and customer touchpoints has added to the complexity of keeping up with these constant changes. Only organizations that are agile enough to understand, evaluate and react to these dynamic requirements can drive innovation and growth. Therefore, organizations must be creative in their consumer engagement strategy across the marketing funnel to enhance overall customer experience, measure the performance, and establish the loopback to refine the strategy. The following paper outlines concepts to help consumer businesses accelerate customer experience management. The objective of the paper is to lay out guiding principles that organizations can use as part of their business processes to create, deliver, and measure personalized customer experiences and drive growth, loyalty, and satisfaction. The paper will dive into the three most important pillars of building successful customer experiences – Design a Customer Experience Management Model, Activate across touchpoints, and Measure performance across touchpoints. These pillars have a direct impact on top-line growth and profitability by understanding "how to engage with customers," "what strategies to deploy that will resonate with customers," and "how to measure performance to have a direct impact on top-line growth and profitability.

Keywords: customer experience, customer journey map, measurement, acquisition, personalization, strategy, user acquisition, growth funnel, CLV, NPS, churn, case study, customer satisfaction, consumer engagement.

I. Introduction

Customers form the foundation of a successful business. Therefore, it is imperative for organizations to maintain an ongoing relationship with the customers and provide them with enhanced experiences no matter where the customer is engaging with the business – social media, AR/VR, email, forums, apps, in-store, or call center. Moreover, customers expect brands to understand their needs, interests, and preferences and deliver content, products, and offers that are relevant and personalized. Grand View Research shows that the CX management market in the US reached $2.9B in 2021 and is expected to grow 15.3% every year from 2022 to 2030, making the customer experience a key pillar for businesses.

Moreover, research by Amplify shows that 49% of consumers have left a brand in the past year due to poor customer experience, and 86% would leave a brand after as few as two poor experiences. As a result, there is immense pressure on organizations to deliver engaging customer experiences and emphasizes the importance of delivering excellent customer experiences.

Often, brands are extremely focused on a particular aspect of experience, e.g., acquisition, conversion, or retention. As a result, campaigns, budget, and measurement are too dependent on the focus area. For example, paid media is a crucial touchpoint with the customer. But often, the media team sits separately from the rest of the brand, work is mainly outsourced to agencies, and the campaigns are solely focused on awareness or customer acquisition. Similar siloes exist within email, site, app, and in-store channels. Moreover, these teams do not have a unified view of data, insights, or content, and each team uses its own data or segments for targeting. This results in a disjointed customer experience. The below methodology provides a unique framework for brands to align on objectives and metrics to deliver a consistent and coherent customer experience across owned and paid touchpoints. It is critical to approach customer experience management holistically and follow the three-step process outlined below. The framework will provide organizations a way to understand data that they need, insights that they should gather, and measurement systems that they should establish. The outlined methodology will allow an organization to break down the siloes around customer experience management and enable teams to design, activate, and measure experiences at scale.

Author: Adobe, New York, USA. e-mail: shashank.katare@gmail.com
Three critical components of a holistic customer experience management process

**Design** customer experience management model
- Define top-line growth objective
- Align on metrics linked to the objective
- Prioritize key customer journeys to drive the desired outcome

**Activate** the model across touchpoints
- Gather cross-journey insights & create target segments
- Streamline content creation tied to channels, devices, and segments
- Automate content assembly and delivery across channels

**Measure** model performance across touchpoints
- Design executive-level and journey-based reports and dashboards
- Democratize data and insights across organization
- Create a feedback loop from measurement back to strategy & planning

Figure 1: Overview of Customer Experience Management Model

Customer experience management is a tricky thing to accomplish as it requires investment in technology, resources, and processes. But brands who undergo this journey have seen tremendous benefits in terms of revenue, customer retention, and employee satisfaction. Investment in these capabilities increases their digital maturity, make the brands more customer centric and elevate the customer experience from batch and blast to an individual level.

Customer experience maturity from batch and blast to individual-specific targeting

<table>
<thead>
<tr>
<th>1:All</th>
<th>1:Many</th>
<th>1:Few</th>
<th>1:Microsegment</th>
<th>1:1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same static experience to all audiences across all touchpoints</td>
<td>Some experience is tailored based on broad segmentation (e.g., demography)</td>
<td>Experience is tailored to specific granular segments (e.g., behavior) and across some channels</td>
<td>Experience is personalized at an individual level leveraging omnichannel data across channels at scale</td>
<td>Experience is personalized at an individual level leveraging omnichannel data across channels at scale</td>
</tr>
<tr>
<td>Channel specific reporting with data latency</td>
<td>Some campaign or channel specific reporting</td>
<td>Cross-channel insights with campaign specific reporting</td>
<td>Omnichannel reporting framework with attribution capabilities across journey stages</td>
<td>Omnichannel reporting framework with attribution capabilities across journey stages</td>
</tr>
</tbody>
</table>

Figure 2: Customer Experience Maturity Model

**II. THREE KEY CUSTOMER EXPERIENCE MANAGEMENT PILLARS**

**a) Design Customer Experience Management Model**
Customer experience is increasingly becoming a pivotal vector to differentiate against the competition. Gone are the days when price or product was enough to win customers. In today’s dynamic market, it is crucial for companies to develop and nurture relationships with their customers. As a result, customer experience (CX) strategy has been the focus of businesses. A customer experience strategy defines an approach to elevate customer experience to meet business objectives. Defining, planning, and executing a good customer strategy requires brands to understand customer needs, behaviors, and preferences, generate insights, and deliver exceptional experiences to meet those expectations.

Marketers should not design customer experience in silo, but should consider every interaction across channel, device, and touchpoints. Therefore, the customer experience management should design must include with every interaction throughout the journey funnel: Attract, Engage, Convert, Retain, and Nurture.

- **Attract** – How are customers becoming aware of the business and its products or services?
- **Engage** – How are customers engaging and evaluating multiple offerings that would cater to their needs?
- **Convert** – How many customers are taking the action tied to business objective? (e.g., sign-ups, app installs, purchase, etc.)
- **Retain** – How many return customers does the business get? How many customers churn?
- **Advocate** – How many customers are advocating for the business to other people?

The customer buying process has evolved significantly over a period. It is non-linear, involves multiple touchpoints (online and offline), and has become extremely complex. Customers interact with the brand across multiple touchpoints, channels, and devices throughout the journey stages. In fact, due to the proliferation of digital channels and touchpoints, a typical customer gets exposed to a brand or product across multiple points in the buying lifecycle. Therefore, it has become imperative for brands to engage and nurture customers seamlessly across touchpoints.

**Figure 3:** Comparison of Linear/Traditional Customer Journey to a Non-Linear Customer Journey

Customers are taking over control of their buying journey and expect brands to meet their needs and preferences. Brands must be prepared to meet customers where they are, provide the next-best offer and next-best action, and deliver a personalized experience that is unique to an individual. Consumers expect the companies they interact with to know them and anticipate their needs. Meeting these expectations can be challenging because it requires combining data from multiple solutions within their tech stacks to get a clear picture of an individual customer and act on those real-time insights to deliver a truly connected experience.

Therefore, marketers should consider customer needs, preferences, and behavior across various journey stages while designing customer experience management model.
b) Activate Customer Experience Across Touchpoints at Scale

A customer interacts with the brand or products across various touchpoints. The interactions can be a result of marketing campaigns or through word of mouth and is not the same for each customer. Some customers learn about the brand through paid media channels, e.g., social media, while others might learn about it through organic search or see a store on their way to work. Therefore, it is critical that different cross-functional teams collaborate to provide the best experience a customer can have across these touchpoints.

Activating customer experience across touchpoints at scale is providing consistent and seamless experience to your customers across different touchpoints. It involves understanding customer personas and journeys and leveraging data and real-time insights to tailor experiences at an individual level. It also requires organizations to democratize data and, align KPIs across different teams, and take a customer centric approach to provide the best possible experience to the customer based on their needs, preferences, and behaviors. Customer Journey Orchestration is the next level of optimization and personalization strategies, and tactics companies usually deploy. It is all about leveraging data across the journey touchpoints, channels, and sources to personalize every moment in the entire experience across the journey funnel.

This is a challenging task to accomplish since it involves organizational shift in mindset, adopting agile ways of working, and pushing the boundaries to achieve a unified goal. A lot of time, companies have siloed systems and functions that inhibit activating consistent and seamless experiences across touchpoints, channels, and devices. For example, marketing, channels, customer experience, testing and personalization teams have different objectives, measure different KPIs, and use data from disparate systems. Moreover, these teams sometimes fall under different orgs and departments (e.g., CMO, CDO) leading to different objectives. As a result, the customer experience is disjointed, leading to low customer satisfaction.
Holistic omnichannel orchestration

Case Study: Let us look at a case study to understand how a mortgage provider improved customer experience using journey orchestration.

- **Challenge**: A leading mortgage provider noticed increased mortgage journey costs while a low self-service percentage.
- **Solution**: the CX team analyzed the journeys and identified issues within the refinancing journey. They noticed that first call resolution (CFR) had fallen from 65% to 30%, and call volume had increased significantly. Root cause analysis indicated that most of the calls were while someone was uploading documents using the iOS mobile app. The CX team worked with IT to fix the app and with marketing to create audiences of segments who are facing the issue and are in the refinance journey to send automated notifications with a workaround and update on the resolution.
- **Impact**: As a result, the company increased the mobile refi nancing journey completion rate and reduced the call center volume.

c) **Measure Customer Experience Effectiveness Across Touchpoints**

Organizations have understood that customer experience is essential in engaging customers and driving loyalty. However, research has shown a direct correlation between customer experience and business growth. As organizations focus on improving customer experience and move on the maturity curve, they will start seeing revenue growth and a significant improvement on other metrics.

Typically, organizations look at increasing revenue as they advance (go further to the right) on the customer experience maturity. As a result, measuring the performance is extremely critical because:

- Companies usually start small, and realizing value keeps the team motivated
- Measuring success helps with the business case and getting buy-in or securing budget
- Drives adoption across the organization

**Figure 5: Overview of Campaign Orchestration with Key Components Required**
Exceptional customer experience performance measurement systems and processes are rooted in key metrics that help with not only understanding the overall impact on revenue but also with evaluating other areas, such as customer satisfaction and campaign performance across journey touchpoints.

Although there are a lot of metrics that you can track to evaluate performance, there are seven key metrics that organizations can start with to measure customer experience. Usually, brands will use these in conjunction to measure insights from different points of journey touchpoints and have a holistic view of the overall customer experience.

1. **Net Promoter Score (NPS)**

   This is one of the most widely accepted metrics to measure the success of campaigns. Most brands will use NPS to understand and measure customers’ overall perception of the products and brand.

   **Methodology:** The NPS is calculated by gathering direct inputs from customers, such as a survey.

   **Question:** The key question to ask is:
   “How likely are you to recommend the product/service/brand to friend or colleague?”

   The customer is asked to score on a scale from 0-10, where 0 = “Unlikely” and 10 = “Definitely”.

   **Analysis:** The customers are then divided into three groups based on their response:

   - **Promoters (9-10):** these are primarily loyal customers who are passionate and enthusiastic about the product/service/brand and will continue to promote the company. They will continue to shop with the company and will share their experiences with others and encourage them to do the same.
   - **Passive or Neutral (7-8):** These are tricky customers. They are mostly satisfied but are not passionate or enthusiastic about spreading the good word about the product/service/brand. These customers won’t talk negatively about the company but can be motivated to shop with competitive brands depending on offer, product, or experience.
   - **Detractors/Critics (0-6):** These are unsatisfied customers and may be vocal about sharing negative experiences. These can harm the brand and can impede growth through their negative opinions.

   **Calculation:** To calculate the NPS, we will subtract the percentage of Detractors/Critics from the percentage of promoters. We don’t consider Passives/Neutral in the formula.

   NPS can be calculated as % Promoters - % Detractors as shown below

   

   \[
   \text{Net Promoter Score} = \left( \frac{\text{Number of Promoters} - \text{Number of Detractors}}{\text{Number of Survey Respondents}} \right) \times 100
   \]

   **Example:** To put this in context, let’s take an example where a company surveyed 100 customers and received below responses:

   - 50 respondents rated among 9 and 10. These are classified as Promoters.
   - 20 respondents rated among 7 and 8. These are classified as Passives/Neutral.
   - 30 respondents rated from 0 to 6. These are classified as Detractors.

   After taking percentages, we get, 50% are Promoters, 20% are Passives and 30% are Detractors. Using the above formula, NPS = 50 - 30 = 20.

   NPS may vary from -100 (all Detractors) to 100 (all Promoters) and can change over time.

   Although, there is not a defined set of guidelines for what is a good NPS score, here is a general approach to follow. It will differ based on the organization’s goals and specific objectives.
The Three Most Critical Aspects for Implementing Holistic Customer Experience at Scale

- 70+: exceptional NPS
- 50 to 69: strong NPS with room to improve
- 49 or less: should be actively improved
- Below 0: needs immediate attention

2. Customer Effort Score (CES)
   This metric corresponds to the level of effort a customer must go through to solve their problem e.g., find a product, take an action on the site, or get a question answered. CES often indicates how much effort customers are putting into interacting with the brand, service, or product and has a significant impact on driving loyalty and satisfaction. In fact, Harvard research has shown that level of effort a customer puts into finding a solution to their problem is a better indicator of customer loyalty than delighting the customer. Reducing friction points can reduce customer service costs and attrition. Therefore, measuring the ease of a customer’s experience can help improve customer service.

   **Methodology:** Typically, this can be measured with a post-interaction survey to the customers asking about their recent experience. The response will be on a scale of low to high effort, and the calculation will be around average and score distribution.

   **Question:** To get the score, the survey must have a question
   “The company made it easy for me to find the answer to my problem”

   The customers are asked to score from 1 to 5 or 1 to 7 depending on the objective. The company also can decide to set the score as 1 – strongly disagree and 5 or 7 – strongly agree.

   **Analysis:** The responses can be collected in numerical value or emoticons. Based on the emoticons, the company can assign a numerical value and calculate the score.

   **Calculation:** CES can be calculated with a simple formula

   \[ \text{Customer Effort Score} = \frac{\text{Sum of Customer Effort Ratings}}{\text{Total number of survey responses}} \]

   Although there are multiple types of survey questions, a company can formulate, here are a few sample questions to ask in the survey:
   - How fast were you able to find a solution to your problem? Here the company can decide the numerical scale to use.
   - How much effort did you put in to find the solution to the problem? Here the company can assign a numerical number to the level of effort. e.g., a lower score for less effort and a higher score for more effort. Alternatively, the company can also use emoticons for low, medium, and high-level effort and assign values to each for calculation.
   - How easy was it to take a specific action related to an event, e.g., adding to cart, finding a product, or signing up.

3. Customer Satisfaction (CSAT)
   This metric helps measure customer satisfaction with the product, service, or brand. It also indicates whether the customer will churn and steps to take to retain the customer. However, companies should not use CSAT alone to make churn and retention decisions. In fact, they should use the customer satisfaction data to understand at a more granular level which parts of the product or service customer is satisfied or unsatisfied with and can be improved. For example, a customer can help with indicating satisfaction with a particular product feature by opening a support ticket or returning a product for a particular reason that can used by the business to optimize the experience.

   **Methodology:** To calculate CSAT, a company can send a short survey with a targeted question to the customers after their interaction with the product, or service. The question is around asking the customers about their satisfaction on a scale of 1-10.

   **Question:** To get the score, the survey must have a question
   “How satisfied were you with your recent interaction with your company?”

   Here the customers can score on a scale of 1-10 or from very dissatisfied to very satisfied or can be star ratings from 1-5.

   **Analysis:** The responses collected can all be converted into a quantitative score no matter what method was used.

   **Calculation:** CSAT can be calculated with a simple formula

   \[ \text{Customer Satisfaction Score (CSAT)} = \frac{\text{Sum of Scores}}{\text{Total number of survey responses}} \]

4. Customer Lifetime Value (CLV)
   This is a key metric to track as part of the overall customer experience management program. Companies can use CLV to measure the value of a customer over a period, not just based on purchase but on the overall relationship. CLV represents the net present value of the profit that a customer generates across the relationship with the business.
The Three Most Critical Aspects for Implementing Holistic Customer Experience at Scale

\[ CLV = \sum_{k=1}^{n} \frac{(CR_k - C_k) \times R^k}{(1 + d)^k} - AC \]

- CR - customer revenue
- C - customer costs
- R - retention rate
- d - discount rate
- AC - Customer Acquisition Costs

5. **Customer Retention Rate (CRR)**
   
   This metric tells you how many customers stay with the company over a period of time. It is relevant and connected to the churn rate. Retention is helpful because you know when the customers are more likely to stop using or paying for the product or service. This can also be modeled and applied to different audience cohorts and used to create specific tactics for these cohorts.
   
   The Customer Retention Rate can be calculated as follows:
   
   \[ \text{Customer Retention Rate (CRR)} = \frac{\# \text{ of customers at the end of the period} - \# \text{ of customers acquired during the period}}{\# \text{ of customers at the start of the period}} \times 100 \]

6. **Customer Churn Rate (CCR)**

   Businesses usually spend a lot more on acquiring new customers than retaining them. Therefore, it is imperative for firms to keep an eye out on the churn rate. The lower the churn rate, the more loyal the customers are. Retention rate and churn rate go hand in hand since you can see where the retention rate is dropping off, which users are churning, and how can you retain them.

   \[ \text{Customer Churn Rate (CCR)} = \frac{\# \text{ of customers at the start of the period} - \# \text{ of customers at the end during the period}}{\# \text{ of customers at the start of the period}} \times 100 \]

7. **Repeat Customer Rate (RCR)**

   This is a metric that can be applied to most businesses, especially that are not SaaS. Usually, companies spend a lot of money on acquiring customers and spend a lot of time on making sure that they are driving repeat purchases. Therefore, repeat customer rate becomes important, especially because you do not want the customer to go to a competitor. More and more retailers are now introducing new tactics to keep the customers coming back returning to them, such as save and subscribe, auto-replenishment, etc. They are also encouraging users to sign up for the app since app users have higher clv than non-app users and the app has a better link to loyalty.

   \[ \text{Repeat Customer Rate (RCR)} = \frac{\text{Number of return customers}}{\text{Total number of customers}} \]

d) Reporting and Dashboards

   While setting up metrics and measurement system is essential, it is valuable only if the insights are relayed to the teams and executives to take necessary action. Therefore, companies set up various types of dashboards and reports for teams to analyze, understand and act promptly. These reports can sit in visualization tools such as Tableau or PowerBI and can be scheduled to be delivered via email or text, depending on the cadence and urgency. A sample dashboard is shown below:
III. **Findings and Discussion**

a) **Case Study**

Companies can leverage all the methodologies and frameworks to evaluate and elevate the customer experience. Let us look at real-life examples of how firms across different industries have adopted these techniques into their customer experience management program.

*Case Study 1 Focused on Customer Lifetime Value*

**Challenge:** a suburban bank was facing a challenge with effectively allocating budgets across the east and west coasts. They were spending marketing dollars evenly across the coasts but were not getting the best value for the spend.

**Solution:** the bank analyzed data and gathered insights that most of their customers belonged to two specific postal codes, one from the east and one from the west. Upon calculating the Customer Lifetime Value (CLV), they also found that customers on the east had 30% of the customer base but were spending 4x that of customers on the west. This insight led to a change in the allocation of media spend effectively.

**Impact:** by updating the spend allocation, they got more value for the same spend.

*Case Study 2 focused on Customer Churn*

**Challenge:** US telecom operator could not accurately identify customers who are likely to churn for the company to be effective with targeting efforts.

**Solution:** The telecom company created a series of predictive algorithms based on customer behavior, and demographics to create churn prediction models.

**Impact:** As a result, the company not only increased accuracy of predicting customers who are about to churn but also was able to save over 60% on acquisition costs through targeted marketing efforts.

*Case Study 3 focused on Net Promoter Score*

**Challenge:** Hotel Tonight did not have insights into a customer who had a terrible experience since such customers rarely take the time to write to the company.

**Solution:** The company decided to collect feedback from the customers using the NPS survey and used it to prioritize future feature enhancements. They also supplemented it with industry trends and other insights with the NPS survey to enhance the experience.

**Impact:** As a result, Hotel Tonight was able to overtime increase the NPS score to 75

b) **Benefits of Improving Customer Experience**

Enhancing customer experience leads to business growth, customer retention, and loyalty. Below are a few key advantages of focusing on customer experience management and measurement:

- **Increased customer acquisition:** excellent customer experience leads to satisfied customers willing to recommend the brand to their friends and families. Therefore, companies are focusing on enhancing customer experience to build trust and encourage...
customers to share the experience through word of mouth. This, coupled with media targeting, is an effective way to drive customer acquisition.

- **Elevated engagement and increased conversions**: improved engagement drives better engagement rates and increased conversions. A happy customer is more likely to engage and buy from the brand than a prospect or a new customer. Therefore, it is important for the company to build long-lasting relationships and trust with the customers.
- **Effective media spend**: capturing data from customers leads to insights into what is working and what is not working. This helps the company to identify and reduce friction points and be more targeted with the media spend. As a result, the company can drive better results with the media spend and have a significant impact.
- **Reduced cost of serving**: overall better understanding of the customers leads to effective targeting, enhanced cross-sell and up sell opportunities that drive the overall cost down.

**c) Key Considerations while Starting with Customer Experience Management**

Customer experience is a key driver of value and growth for an organization. When getting started with customer experience management there are a few things to consider:

- **Know your customers**: Every business needs to gather data and insights to understand the needs and preferences of the customers. This is a critical step in developing the strategy keeping in mind what would resonate with your customers. Right data can help build right segments and targeting campaigns to deliver personalized experiences.
- **Define objectives and KPIs**: Extremely important to define goals relevant to the company, business model, and maturity and support with right KPIs and achievable and measurable targets.
- **Outline customer journey map**: Based on the understanding of the customer, define a customer journey map. This will include different touchpoints, strategies and experiences based on actions, needs and preferences.
- **Define a roadmap of capabilities**: analyze existing capabilities, identify gaps and supplement with new capabilities aligned to the objectives. Define a roadmap on how these capabilities will be rolled out to deliver the targeted experiences.
- **Measure Impact**: Capture feedback, and performance data to evaluate the impact of the tests and course correct if needed. Companies can learn and iterate as well as influence the strategy through ideating new tests.

**IV. Conclusion**

The concepts around strategy, orchestration, and measurement of customer experience management can be applied to any organization irrespective of the business model, size, and maturity. Organizations can readily adopt the framework, and apply the different measurement strategies based on their objectives to evaluate performance across various stages of the customer experience funnel to drive business growth and profitability. The findings will be of tremendous value to marketers and practitioners looking to plan and implement a customer experience management program. They can use this as a guide and plan out their program from strategy to orchestration and measurement. The frameworks, practices, and methodologies highlighted will advance the knowledge and understanding of marketers on which measurement strategies to implement based on their strategy and objectives.

There are various ways to get started, but the companies can consider the points highlighted in this study to begin gradually, test and learn throughout the process and adopt and evolve as needed before driving adoption throughout the organization.

**a) Limitations and Scope for Future Research**

This study consists of excellent theoretical and conceptual frameworks and techniques that organizations can adopt and implement. However, there is still scope for further research, addressing ideas not touched in this study.

The measurement techniques and key metrics are not comprehensive. Further study can highlight additional metrics, such as active users, free to paid subscribers, etc., that can be included in the customer experience management framework.

Further studies could also leverage additional data from organizations on how they have implemented these frameworks and outline detailed strategies and outcomes.

Finally, more research is needed to understand how different metrics, such as NPS, CSAT, CLV, Retention, etc., work in tandem and what is the effect of improvement in one or more metrics on overall customer experience management.

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Facets of Consumer Behavior Management: Reflexes and Neurointerface

By Roman Yu. Skokov

Volgograd State Agricultural University

Abstract- The Internet, social networks, cloud services and e-commerce have rapidly become important components of modern human life. However, recent studies of neurotechnological companies have marked the foreseeable transition of civilization from the stage of information development to cyber-physical systems that combine the real "analog" world and cyberspace. The scientific novelty and purpose of this study is due to the lack of a holistic study of the evolution of the theory of behavioral design in world science. The interdisciplinary approach is the main method of research, on the basis of which the integration of data, tools, techniques, concepts of physiology, psychology, neurobiology, addictology, sociology, computer science, cybernetics, captology, political science, economics, ethics is carried out. The concept of behavioral design has emerged and is developing as a synthesis of the ideas of the physiological theory of reflexes and reinforcement, the psychoanalytic theory of crowds and operational conditioning, theories of public opinion management and organizational change, institutional concepts of consumer behavior, computerization and development of data networks, neurobiology and artificial intelligence. In foreign practice, behavioral design is used in digital devices, architecture, in the processes of reducing crime, protecting against errors in the organization of processes in healthcare, creating energy-saving, resource-saving and eco-friendly products, solving problems with coronavirus, reducing unproductive screen time, creating virtual products for healthcare, education, social security.

Keywords: behavioral design, neurointerface, cyberphysical systems, addictive design, captology, digital goods, neuroethics.

GJMBR-E Classification: DDC Code: 001.4 LCC Code: Q180.55.M4

Strictly as per the compliance and regulations of:
Facets of Consumer Behavior Management: Reflexes and Neurointerface

ГРАНИ УПРАВЛЕНИЯ ПОТРЕБИТЕЛЬСКИМ ПОВЕДЕНИЕМ: РЕФЛЕКСЫ И НЕЙРОИНТЕРФЕЙС

Roman Yu. Skokov

Abstract: The Internet, social networks, cloud services and e-commerce have rapidly become important components of modern human life. However, recent studies of neurotechnological companies have marked the foreseeable transition of civilization from the stage of information development to cyber-physical systems that combine the real "analog" world and cyberspace. The scientific novelty and purpose of this study is due to the lack of a holistic study of the evolution of the theory of behavioral design in world science. The interdisciplinary approach is the main method of research, on the basis of which the integration of data, tools, techniques, concepts of physiology, psychology, neurobiology, additology, sociology, computer science, cybernetics, captology, political science, economics, ethics is carried out. The concept of behavioral design has emerged and is developing as a synthesis of the ideas of the physiological theory of reflexes and reinforcement, the psychoanalytic theory of crowds and operational conditioning, theories of public opinion management and organizational change, institutional concepts of consumer behavior, computerization and development of data networks, neurobiology and artificial intelligence. In foreign practice, behavioral design is used in digital devices, architecture, in the processes of reducing crime, protecting against errors in the organization of processes in healthcare, creating energy-saving, resource-saving and eco-friendly products, solving problems with coronavirus, reducing unproductive screen time, creating virtual products for healthcare, education, social security. Neurocomputer interface technologies will not replace, but will complement digital behavioral design with new tools, will lead to the formation of the next generation of a wide range of new specific needs and ways to meet them. However, the neurointerface can both contribute to reducing the risks of artificial intelligence for humanity, and can be used by neurotechnological companies for destructive purposes. The theoretical and empirical significance and the need to reorient behavioral design research from the field of business development to the field of consumer protection, the development of healthy behavior, ethical approaches are obvious.

Keywords: behavioral design, neurointerface, cyberphysical systems, addictive design, captology, digital goods, neuroethics.

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Абстрактный— Интернет, социальные сети, облачные службы и электронная коммерция стремительно стали важными составляющими жизни современного человека. Однако, последние исследования нейротехнологических компаний означавали обозримый переход цивилизации от этапа информационного развития к киберфизическим системам, которые объединяют реальный «аналоговый» мир и киберпространство. Научная новизна и цель настоящего исследования обусловлены отсутствием в мировой науке целостного исследования эволюции теории поведенческого дизайна. Междисциплинарный подход является основным методом исследования, на основе которого осуществлена интеграция данных, инструментов, приемов, концепций физиологии, психологии, нейробиологии, аддитологии, социологии, инфоматики, кибернетики, кибернетики, политологии, экономики, этики. Концепция поведенческого дизайна возникла и развивается как синтез идей физиологической теории рефлексов и подкрепления, теории общественного мнения и организационных изменений, институциональных концепций потребительского поведения, компьютеризации и развития сетей передачи данных, нейробиологии и искусственного интеллекта. В зарубежной практике поведенческий дизайн применяется в цифровых устройствах, архитектуре, в процессах снижения преступности, защите от ошибок при организации процессов в здравоохранении, создании энергосберегающих, ресурсосберегающих и эко-продуктов, решении проблем с коронавирусом, сохранении непродуктивного экранного времени, создании виртуальных продуктов для здравоохранения, образования, социального обеспечения. Технологии нейрокомпьютерного интерфейса не заменяют, а дополняют цифровой поведенческий дизайн новыми инструментами, приходят к формированию следующего поколения широкого спектра новейших специфических, потребностей и способов их удовлетворения. Однако, нейроинтерфейс может, как способствовать снижению рисков искусственного интеллекта для человека, так и может использоваться нейротехнологическими компаниями в деструктивных целях. Очевидна теоретическая и эмпирическая значимость и необходимость переориентации исследований поведенческого дизайна из сферы развития бизнеса в область защиты потребителей, разработку направлений здорового поведения, этических подходов.
Интересы цифровых транснациональных корпораций вышли за рамки товарных отношений и стремительно распространяются в социально-политические процессы. Определенными сигналами для государства и общества должны быть, например, методы призыва несовершеннолетних посещать несанкционированные акции в России, блокировка рядом социальных сетей аккаунтов Д.Трампа, который еще был президентом США.

Многие цифровые товары не случайно вызывают привыкание, а по замыслу создаются настолько привлекательными, чтобы как можно больше времени держать потребителя на крючке. Методы дизайна убеждения встроены в игры, приложения и используются, чтобы формировать у пользователей конкретные модели поведения с самого раннего возраста (Jobs@Vox Media, 2018)1. IT-компании используют также аддиктивный дизайн в своих товарах. Для создания цифровых игр, сообществ, онлайн-торговых площадок, приложений и многочисленных других цифровых продуктов, которые хочется использовать все больше и больше (характеристика аддиктивных товаров), технологическими компаниями привлекаются психологи и специалисты по поведенческим наукам. Российская студенческая молодежь проводит перед экранами смартфонов в среднем 8 часов, при этом около 60 % свободного времени приходится на социальные сети и видеохостинги2.


Первостепенное значение в развитии технологий поведенческого дизайна ("behavioural design") принадлежит Великобритании и США, которые с первой половины XX в. применяют их в общественно-политической, экономической и других сферах. Сегодня эти технологии охватили все сферы – экономику, политику, образование, воспитание, дружбу, искусство, досуг, имидж, транс, любовь и другие.

a) Эволюция теории поведенческого дизайна.

Цифровые технологии стали убеждающими или технологами убеждения после того, как в цифровых продуктах реализованы инструменты поведенческого дизайна, который к настоящему времени уже прошел продолжительный эволюционный путь (таблица 1).

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<td>формирование и развитие нейротехнологий поведенческого дизайна</td>
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</table>

b) Физиологические и психологические предпосылки теории поведенческого дизайна.

В основе теории поведенческого дизайна лежат идеи о психологии толпы Г. Лебона (1895 г.), исследования подкрепления, безусловных и условных рефлексов физиолога И.П. Павлова (1901-1903 гг.), идеи психоаналитической теории толпы (1921 г.) З. Фрейда (Фрейд, 2017) 5.

Г. Лебон полагал, что в силу волевой неразвитости и низкого интеллектуального уровня большинство людей ими правят бессознательные инстинкты, особенно тогда, когда человек оказывается в толпе, где все чувства и действия заразительны, происходит снижение уровня интеллекта, падает ответственность, самостоятельность, критичность, повышается восприимчивость к внушеню, исчезает сознательная личность как таковая (Лебон, 2011. Р. 211) 6. Исследования Г. Лебона стали основой пиар-технологий и техник манипуляции массовым сознанием.

3. Фрейд затронул область социологии и политической психологии. По его мнению, люди в толпе действуют иначе, чем люди, которые мыслят индивидуально. Психическое состояние индивида в толпе характеризуется резким усилением влияния следующих факторов (Предвательный, Шерковин, 2011) 7: повышение эмоциональности восприятия всего, что он видит и слышит; повышение внушиаемости и уменьшение степени критического отношения к самому себе и способности рациональной обработки воспринимаемой информации; подавление чувства ответственности за собственное поведение; появление чувства силы и сознания анонимности; переренос психической реальности (желания, фантазии, представления) при сравнении её с реальностью объективной.

Чтобы понять многие явления теории толпы Г. Лебон и З. Фрейд опирались на открытые физиологии. Огромное влияние на объективный, количественно измеримый подход физиологических процессов организма в бихевиоризме, рефлексологии, условно-

5 Фрейд З. Психология масс и анализ Я // Зигмунд Фрейд. Тотем и табу / пер. с нем. Р. Ф. Долгельева. – СПб.: Азбука-Аттикус, 2017.
6 Лебон Гюстав. Психология народов и масс. – М.: Академический проект, 2011. – 238 с.
рефлекторной терапии оказали исследования И.П. Павлова. Он впервые сформулировал принципы физиологии высшей нервной деятельности, понятия подкрепления, безусловный и условный рефлекс, которые стали одними из основных в науке о поведении.

Развивая идеи И.П. Павлова, советский физиолог, создатель теории функциональных систем (модель, описывающая структуру поведения) П.К. Анохин (1935 г.) показал, что принцип обратной связи принадлежит решающую роль в регуляции, как высших приспособительных реакций человека, так и его внутренней среды.

Значительное влияние на теорию дизайна поведения оказали исследования Б.Ф. Скиннера, представителя психологической школы бихевиоризма, которая понимает человеческое поведение как функцию стимулов и вознаграждений (Leslie, 2016)8. Его именем назван ящик Скиннера (Skinner box), созданный в 1930-1931 гг. (Skinner 211)9. Б.Ф. Скиннер поместил голодную крысу в камеру с рычагом, нажав на который крыса получала кусочек корма. После нескольких визитов в камеру крыса научилась нажимать на рычаг, чтобы утолить голод. Вознаграждение сформировало определённую модель поведения. Б.Ф. Скиннер предположил, что этот принцип оперантного научения применим к любому операнту от крысы до человека. Теория оперантного обусловливания Б.Ф. Скиннера широко применяется в техниках модификации поведения, как форма социальной инженерии, например, в программированном обучении. Также с ящиком Скиннера сравнивают игровые автоматы, которые созданы для использования убеждающей силы переменного вознаграждения, а также социальные сети.

c) Концепция управления общественным мнением в основе теории поведенческого дизайна.

Развитие теории поведенческого дизайна во многом связано с исследованиями Тавистокского института человеческих отношений (1946г.) (Coleman, 2016)10. Дж. Коулман считает, что Тависток успешно сохраняя свою секретную роль в формировании дел США, их правительства и народа с начала своего существования в Лондоне, в 1913 г., в Веллинтон-Хаусе.

В ходе своего становления Тавистокский институт для построения рабочей модели опирался на исследования К.М.Уолша (1917 г.) (Walsh, 1917)11. О. Шпенглера (Spengler, 1918)12. В тот период, проектами Тавистокского института были: манипулирование общественным мнением в поддержку объявления войны Великобритании Германии; манипулирование американским общественным мнением в рамках подготовки к вступлению США в Первую мировую войну, информирование и влияние на президента В. Вильсона (Coleman, 2006)13.

Значительными фигурами в довоенном Тавистоке были американцы У. Липпман и Э. Бернейс. У. Липпман является автором концепции общественного мнения (1922 г.) (Липпман, 2004)14. Исследовал природу, формы существования, модели формирования и функционирования общественного мнения, механизмы воздействия на него средств массовой информации. У. Липпман ввел в научный оборот термин «стереотип», определил место и роль стереотипов в системе общественного мнения.

Э. Бернейс создавал и развивал концепцию массового убеждения, основанного не на разуме, а на манипуляции подсознальными чувствами и импульсами при помощи средств массовых коммуникаций (Бернейс, 192315, 192816, 1955)17. Работая во время Первой мировой войны в Комитете по общественной информации администрации В. Вильсона, Э. Бернейс занимался продвижением идеи о том, что усилия американских военных, прежде всего, направлены на «установление демократии во всей Европе». Учитывая успех, пропагандистская модель поддержки демократии Э. Бернейса используется и в мирное время. Э. Бернейс доработал и популяризовав концепцию пресс-релиза, развил для манипулирования общественным мнением метод авторитетов, разработал план по убеждению целевой группы изменить своё мнение по важной проблеме, которая может поменять курс страны (Коулман, 2011. С. 182)18.

Под руководством К. Левина Тависток учредил «Бюро стратегических служб» (предшественника ЦРУ). К. Левин является автором теории «управления кризисами», суть которой в том, чтобы искусственно создать серию кризисов и манипулировать населением («тактика террора Левина»). К. Левин обнаружил, что управление социумом в широких масштабах можно

дости, используя средства массовой информации, в особенности телевидения. В 1950-х гг. К. Леви разработал теорию организационных изменений (модель перемен).

Ф. и М. Эмери исследовали эффекты просмотра телевидения, организационный дизайн (Emery, 1999)19. Ф. и М. Эмери рассматривали телевидение как систему блокирующих аналитические возможности человека, высшие контролирующие функции, рациональные компоненты, активирующие эмоциональные компоненты. Данное поведение имеет общие черты с поведением человека в толпе.


d) Роль институциональных исследований потребительского поведения в формировании теории поведенческого дизайна.


Фундаментом, на котором строится поведение, являются привычки, автоматические действия, основанные на предыдущем опыте. Н.С. Триандис (1977 г.) подчеркивал важность привычек в качестве опосредованного фактора поведенческих изменений в интегрированной модели межличностного поведения, включающей социальные факторы, эмоции, привычки (Triandis, 1977)28.

Дж. Стиглер и Г. Беккер (1977 г.) являются авторами теории рационального привыкания. Они объединили товары, вызывающие привыкание (например, алкоголь и наркотики), в группу аддиктивных. По их мнению, пристрастия, или зависимое поведение не являются антитезой рациональному поведению. В теории рациональных пристрастий «рациональный» означает, что индивиды согласованно во времени максимизируют полезность, и некоторый товар является потенциально аддиктивным, если увеличение потребление в прошлом ведет к повышению потребления в настоящем.

Рациональный подход к поведению аддиктивных потребителей подвергается критике со стороны Р. Ванга, Дж. Томера, К. Вангена, А. Дитона, В. Юнина, Р. Скокова. Действительно, в экономической теории рациональный выбор обозначает поведение потребителя, стремящегося к равновесию и максимизирующему полезность при ограниченных ресурсах. Однако из позиции Г. Беккера не ясно, как согласуется рациональность выбора с максимизацией будущей отрицательной полезности потребления товаров, вызывающих привыкание, можно ли считать выбор рациональным или разумным (от лат. ratio — разум), когда тяжело зависимый потребител находиться в «ситуации без выбора», максимизируется ли полезность по мере продвижения потребителя к летальному исходу.

Аддиктивное потребительское поведение, основанное на формировании привыкания, выходит за

23 Emery F., Emery M. А choice of futures. To enlighten or informs. – Canberra, 1975, p. 38
27 Newell A., Simon H.A. Human Problem Solving, 1972
рамки абстрактной модели неоклассического мейнстрима и является моделью ограниченно рационального экономического поведения, имеющей выход на практику, наряду с существующими институциональными и неинституциональными теориями потребительского поведения.

Многие цифровые товары также как, аддиктивные реализуют потребность ухода от реальности и вызывают зависимость, поэтому являются аддиктивными, например, видеоигры, социальные сети, видеохостинги. Аддиктивные цифровые товары по замыслу производителей вызывают привыкание. Игровые зависимости в 2018 г. включены Всемирной организацией здравоохранения в 11 издание Международной классификации болезней. Игровое расстройство определяется, как модель поведения при игре в цифровые или видео игры, отличающаяся нарушением контроля за игрой, отведением игр все большего приоритета до такой степени, что ей отдаётся предпочтение перед другими интересами и повседневными занятиями.


Цель применения поведенческого дизайна ИТ-компаниями при создании продуктов является максимальное использование времени пользователей. Частные и общественные издержки от использования потребителями в непроизводственных целях цифровых аддиктивных товаров колоссальные. При современном уровне развития технологические компании могут их достаточно точно оценить. Однако, технологические компании не заинтересованы в оценке издержек общества от потребления их цифровых аддиктивных товаров, поскольку они превращаются в их прибыль.

С точки зрения современного фактически неконтролируемого по времени использования потребителями цифровых товаров, например, смартфонов детьми и молодежью, представляется важнейшим вывод Г. Беккера, что при изучении любых форм использования нерабочего времени необходимо принимать в расчет упущенную ценность времени, которое пришлось на них израсходовать. В данном аспекте вновь проявляется проблема соотношения рационального и ограничению рационального поведения.

Поэтому столь важно пристальное внимание к инструментарию цифрового поведенческого дизайна, реализованного в цифровых благах, что может лежать в основе формирования моделей ограниченно рационального поведения потребителей.

При создании сайтов широко используется теория неприятия потерь (loss aversion) Д. Канемана и А. Тверски (1979г.). Суть данной теории заключается в том, что люди больше стремятся избегать потери, чем получать эквивалентные прибыли (поведенческая аномалия).

Теорию поведенческого дизайна или дизайна для изменения поведения тесно связывают с работой по психологии дизайна Д. Нормана (1988 г.). Д. Норман представил принципы, применимые к дизайну вещей, такие как аффорданс, ограничение, обратная связь и отображение.

в) Развитие цифровых технологий поведенческого дизайна.


В двенадцатом докладе Римского клуба «Микроэлектроника и общество: на радость или на горе» (Scliaff, 1982) обращалось внимание на двойственный характер компьютеризации мира и вторжения микропроцессоров во все сферы жизни современного общества (Лифт, 1997). С одной стороны, эта революция ведет к созданию благоприятных возможностей для повышения производительности труда, развития сервисной экономики и реорганизации способов коммуникации между людьми, совершенствования процессов обучения и медицинского обслуживания. С другой стороны, она сопровождается ухудшением рабочих, занятых в традиционных отраслях промышленности, использованием электронных досе с целью осуществления контроля над людьми или оказания давления на них, ограничением возможностей свободного развития личности и роботизации человека.
В 1997 г. Б. Дж. Фогг выступил с докладом на тему использования компьютеров для влияния на поведение пользователей. Он отметил, что компьютер перестал быть чисто рабочим инструментом и стал частью жизни. На доклад было два типа реакции:
1. Это опасно, поскольку с помощью этого инструмента можно создать «атомную бомбу».
2. Это великоленно и можно заработать миллиарды.

Б. Дж. Фогг является разработчиком дисциплины «каптология» (термин captology введен в 1996 г. - начальные буквы словосочетания «Computers as Persuasive Technologies»), изучающей компьютеры, как технологии убеждения. Включает разработку, исследование и программный анализ интерактивных вычислительных продуктов (Интернет, настольное программное обеспечение, специализированные устройства и т.д.), созданных с целью изменения отношения или поведения людей.


В 2007 г. Б. Дж. Фогг с Д. МакКлором преподавал Стенфордский курс по приложениям Facebook, где студенты использовали дизайн убеждения для их создания, который собрал миллионы пользователей в течение 10 недель. В 2010 г. Б. Дж. Фогг стал соавтором книги, чтобы помочь родителям понять Facebook и защитить своих детей.

Facebook, Instagram и другие технологические компании IT-индустрии развили поведенческий дизайн до нового уровня. Одним из самых слабых туманов, являющихся люди. Социальное взаимодействие (и даже его симуляция) запускает приятные, формирующие привычку химические реакции. В социальных сетях мотивацией является желание людей общаться или страх отторжения обществом. Разработчики социальных сетей создают алгоритмы, чтобы пользователи как можно больше времени проводили на сайте. В компьютерных играх элементами поведенческого дизайна являются желание получить навыки, добиться достижений, простота использования, виртуальные бонусы и др.


Модель дизайна эмоций П. Десмета и П. Хеккера (2002 г.) объясняет процесс ответственный за эмоциональную реакцию на конкретный дизайн продукта, отношения между дизайном продукта и эмоциональными реакциями. П. Десмет в общей модели «Эмоции продукта» установил три основных параметров: оценка, озабоченность и стимул. П. Десмет, П. Хеккер и М. Хиллен исследовали отношения между эмоциями, вызываемыми дизайном автомобиля и базовыми человеческими ценностями (Desmet, Hekkert, Hillen, 2003)40. Авторы справедливо заметили, что дизайнеры могут предсказать или манипулировать эмоциональным воздействием их конструкций, когда они знают о проблемах конкретного человека, для которого они разрабатывают эти продукты. Цифровые продукты, которыми пользуются сегодня потребители, позволяют составить портрет клиента без его согласия.

При разработке дизайна сайтов также применяется архитектура выбора или теория подталкивания Р. Талера (2008 г.)41, когда пользователям не навязываются продукты или услуги манипулируя их выбором по умолчанию, а делается выгодное и интересное предложение, которое слегка подталкивает пользователей к принятию решения.

41 Талер Р., Саувсейн К. Nudge. Архитектура выбора. Как улучшить наши решения о здоровье, благосостоянии и счастье. – М.: Манн, Иванов и Фербер, 2017. – 240 с.
Д. Локтон, Д. Харрисон, Н. А. Стэнтон (2010 г.) ввели определение «дизайн с намерением» («Design with Intent», DWI) как предназначенного для воздействия или приведения к определенному поведению пользователя (Lockton, Harrison, Stanton, 2010)42.

Н. Эль и Р. Хьюер (2014 г.) продолжили адаптацию идеи Б. Дж. Фотта для коммерческой сферы 43. Бизнесу предложена техника создания продуктов нового поколения, которые могут манипулировать поведением людей, способны завоевать любовь потребителей. Н. Эль и Р. Хьюер описали модель «крючка» – четырехэтапного процесса (триггер, действие, переменное вознаграждение и инвестиция), который успешные компании используют для формирования потребительских привычек.


Т. Д. Комбс и Р. А. Браун (2018 г.) представили формализованный фреймворк для программирования поведения пользователей (Combs, Brown, 2018)46. Авторы фокусируются на конкретной области поведенческого дизайна – привычках, как они работают, как использовать поведенческий дизайн при создании продукта, чтобы привлечь его в ежедневную привычку пользователей. Также представлены этические принципы при эффективном изменении поведения. Авторы основали компанию Boundless Mind (2015 г.) в противовес технологическим гигантам и используют технологии убеждения не для максимального увеличения времени просмотра пользователем экрана смартфона, а для построения его здорового использования.

М. Валлар (2019 г.) предложил модель применения поведенческой науки на практике, включающую четыре этапа: разработка поведенческой стратегии, поведенческий дизайн, оценка воздействия на поведение47.

Кантология сформировалась в результате междисциплинарного синтеза исследований физиологии, психологии, социологии, аддиктологии, информатики, стала инструментом политологии, экономики, и на современном этапе требует активного привлечения этики. Очевидна теоретическая и эмпирическая переориентация исследований поведенческого дизайна из сферы развития бизнеса в область защиты потребителей, разработку направлений здорового поведения, этических подходов.

f) Киберфизические перспективы поведенческого дизайна.

Будущее цифрового поведенческого дизайна связано с нейрокомпьютерным интерфейсом, развитие которого приведет к формированию следующего поколения широкого спектра новых благ и потребностей. Нейронинтерфейс способен устранить или корректировать последствия тяжелых заболеваний (травм головного мозга, болезни Паркинсона, эпилептических состояний, мышечной дистонии, сенсомоторной тугоухости, детских церебральных параличей и др.), подавлять или стимулировать желания, эмоции, определять настроение, контролировать человека.

Исследования нейротехнологических компаний Neuralink и Synchron ознаменовали предпосылки перехода цивилизации от этапа постиндустриального (информационного) развития к киберфизическим системам.

Компания Neuralink, изначально созданная чтобы помочь людям с черепно-мозговыми травмами, разрабатывает имплантируемые нейронинтерфейсы («мозг – компьютер»). Например, имплант для квадриллигиков – людей, у которых полностью или частично парализованы руки и ноги. Предполагается, что чип-имплант обеспечит им «цифровую свободу», дав возможность взаимодействовать с компьютерами и телефонами натуралитистическим способом с высокой пропускной способностью. Компания работает над созданием 1024-канального устройства (N1 Link), которое после имплантации становится полностью невидимым и передает данные по беспроводной связи. Neuralink использует оригинальный способ имплантации электродов, так называемую «швейную машинку для мозга». Технология заключается в огибании мозга с помощью видеокамеры тонкими нитями, не нанося травм, вреда. Это разработка, будущих продуктов, испытанных на крысах, свиньях и обезьяне, которая благодаря импланту смогла играть в видеоигру пинг-понг. Ближайшим большим шагом для Neuralink станут клинические испытания его устройства на людях.

Компания Stentrode получила разрешение от Управления по контролю за продуктами и лекарствами (США) на тестирование своего устройства на людях. Она планирует поместить устройство размером меньше спички в мозг, чтобы помочь парализованным пациентам управлять цифровыми устройствами через свои мысли.

До сих пор в качестве инструмента технологии создания цифровых благ нового поколения используется цифровой (или компьютерный) поведенческий дизайн, который позволяет формировать потребительские привычки, манипулируя поведением людей. Существуют различные модели описания данного процесса, например, «крючка» Эзя и Р.Хувера, представленного четырехэтапным процессом из триггера, действия, переменного вознаграждения и инвестиции. Цифровой поведенческий дизайн базируется главным образом на психологии.

Разработчики нейронинтерфейсов нацелены на создание целостного интерфейса мозга, способного более тесно связывать биологический и искусственный интеллект. Нейрокомпьютерный интерфейс, как система для обмена информацией непосредственно между мозгом и электронным устройством, базируется на нейробиологии. Нейрокомпьютерный интерфейс открывает на порядок большие возможности по воздействию на поведение человека, по сравнению с цифровым поведенческим дизайном. Поведенческий дизайн преобразует, воздействует, влияет на поведение, приближает его к определенному проекту. Нейронный интерфейс способен абсолютно определять потребительское поведение в соответствии с проектом. Он сможет задавать, устанавливать потребительское поведение в полном диапазоне в зависимости от целей управления: абсолютно рациональным, рациональным, ограниченно рациональным, и даже иррациональным, которое отсутствует в мэйнстриме экономической науки.

Одной из долгосрочных целей нейротехнологических компаний декларируется снижение рисков искусственного интеллекта для человечества. Однако, существуют и двунаправленные нейронинтерфейсы, которые позволяют мозгу и внешним устройствам обмениваться информацией в обоих направлениях: в основе нейрокомпьютерного интерфейса используется метод биологической обратной связи. Почему риски будут зависеть от применения технологии.

Технологии нейрокомпьютерного интерфейса не заменят, а дополнят цифровой поведенческий дизайн новым инструментарием, приведут к формированию следующего поколения широкого спектра новейших товаров и потребностей.

С одной стороны, технологии расширяют возможности человека и добавляют степени свободы. С другой стороны, могут ее отнять, поскольку с помощью импланта можно контролировать человека.

Нейротехнологии работают, взаимодействуют с нервной системой, полученной в результате эволюции, способами не предназначенными для этого. К чему приведет такое взаимодействие не известно. Человеческий мозг содержит 86 миллиардов нейронов, нервные клетки стимулируют друг друга. Высшие функции мозга обеспечиваются расшифровкой нервного кода, т.е. пониманием того, как отдельные нейроны объединяются в структуры, а структура – в систему и в целостный мозг. Коды не известны.

Основываясь на данных научных исследований академика П. Анохина, в возникновении временной связи при образовании условных рефлексов лежит сенсорно-биологическая конвергенция импульсов на каждой клетке коры. Позитронно-эмиссионная томография дает возможность проследить, какие области функционируют при выполнении тех или иных психических функций, но все же недостаточно известным остается то, что происходит внутри этих областей, в какой последовательности и какие сигналы посылают друг другу нервные клетки и как они взаимодействуют между собой.

Глубокая стимуляция мозга или торможение определенных зон может создать проблемы, о которых человек еще не знает. Стимулируя различные области, делая записки в определенных областях и давая обратную связь, технологии изменяют сущность людей. В тоже время, компьютер не может мыслить так, как человек, еще менее способен чувствовать и понимать, не обладает ни семантикой, ни сознанием, не в состоянии радоваться победе над противником (Дельгадо, 2022).

Тем не менее, киберфизические системы открывают новые направления экономики, которые могут сделать людей более здоровыми, богатыми и счастливыми. Но возникают также и научные вопросы, которые связаны с инициативностью, независимостью, идентичностью человека. Появилась междисциплинарная область исследований нейроэктики, предметом которой выступают этические проблемы и вопросы, связанные с нейронадуками и изучением мозга человека в целом. Этическая зона зависит от общества: как технологии будут использоваться, кем, в каких целях. Но пока общество не в силах принимать эффективные решения в силу недостаточной осведомленности.

Европейский проект «Этнические аспекты CPS» направлен на то, чтобы дать представление о потенциальных этнических проблемах и связанных с ними непреднамеренных последствиях возможного развития технологии CPS к 2050 г. Главной целью является поддержка Европейского парламента, парламентских органов и отдельных членов в их

ожидании возможных будущих проблем, связанных с разработками в области CPS, робототехники и искусственного интеллекта.

g) Практика применения поведенческого дизайна и управления.

Современная международная практика применения поведенческого дизайна включает:

− выстраивание взаимодействия человека с электронными, цифровыми устройствами, для чего компании, работающие в сфере потребительских технологий, используют те или иные формы убеждения с целью привязки пользователей к приложению для продажи его внимания и доступа к его личным данным рекламодателям, политическим кампаниям и др. (видеоигры, платформы электронной торговли, социальные сети, сервисы обмена мгновенными сообщениями и голосовой связи, службы электронной почты, мультимедийные сервисы и многие другие цифровые приложения);

− архитектуру городов, районов отдельных зданий для снижения уровня преступности, поскольку архитектурные решения могут оказаться более практичными, чем традиционные способы49, которые часто рассматриваются, когда борьба с преступностью становится междисциплинарной, например, улучшение воспитания детей и семьи, усиление правоохранительных органов или больше рабочих мест и образования;

− защиту от ошибок при организации процессов в здравоохранении, которая основана на использовании изменений в физическом дизайн процессов для снижения влияния человеческого фактора через50, установку одноцветных трубок и точек их подключения так, чтобы нельзя было подключить не ту трубку, изменение цвета тюбиков с лекарствами, установку автоматических таймеров; указание в протоколе осмотра, что пациент должен вернуться через 4 недели; требование, чтобы две медсестры независимо сверили этикетку на анализе крови с идентификационной лентой пациента и др.;

− создание продуктов, располагающих к экономии энергии и других ресурсов – Т. Бхамра, Д. Лили и Т. Тан (2008 г.) выявили разрыв между экологическим сознанием, ценностями и реальными поведенческими действиями потребителей51 и предложили 7 комплексных креативных стратегий дизайн устойчивого потребительского поведения: эко-информация и эко-образование; эко-выбор; эко-обратная связь; эко-генезис; эко-ролевое управление; экотехническое вмешательство; умный дизайн, направленных на снижение потребления энергии, ресурсов и вредного воздействия на экологию;

− создание продуктов для снижения воздействия на окружающую среду – Д. Герен и М. Канг (2009 г.) определили экологический дизайн интерьера как разработку всех систем и материалов с упором на интеграцию в единое целое с целью минимизации негативного и максимизации положительного воздействия на окружающую среду, экономику и социальную сферу на протяжении жизненного цикла здания52. М. Форкато и С. Атильядо (2015 г.) провели исследование для проектирования экобратной связи в стиральных машинах, предназначенных для социального жилья53, т.е. для населения с низкими доходами с целью сбережения, например, повторное использование промывочной воды в других домашних делах, порошковые таблетки Unilever для противодействия чрезмерному потреблению стирального порошка и др.;

− повышение безопасности использования продуктов Д. Локтон, Д. Харрисон, Н. А. Стентон (2010) предложили применить метод «дизайн с намерением» в области проектирования банкоматов54, т.е. решения проблемы взаимодействия человека и технологии для снижения вероятности того, что покупатель оставит свою карту в банкомате, что может быть использовано при проектировании систем охраны и пожарной безопасности в домовладениях и организациях;

− решение проблем, связанных с коронавирусом, которые испытали люди во всем мире – высокий уровень беспокойства и стресса, что приводит к дополнительным проблемам со здоровьем, отношениями, продуктивностью и требует активации положительных эмоций, 200 методов которые собраны Стиндфордская лабораторией Б. Дж. Фогта.

− сокращение нежелательного экранного времени − Стенфордской лабораторией создана база данных методов сокращения экранного времени и онлайн-инструмент «Screentime Genie»;
− корректировку и изменение общественного мнения с помощью социальных сетей, роль которых нарastaют во всех сферах жизни, поскольку в политическую сферу входят поколения, сформировавшиеся в цифровой среде, ставшей полем политической (или компьютерной, или цифровой) пропаганды: соцсети Twitter стала важным инструментом в победной избирательной компании Д. Трампа на президентских выборах США; российская оппозиция использовала цифровые платформы YouTube и TikTok в качестве основных информационных каналов;
− производство виртуальных продуктов в сфере здравоохранения, образования, социального обеспечения − Р. Браун и Т. Д. Комбс учредили «Boundless Mind», т.е платформу искусственного интеллекта для дизайна поведения, которая анализирует реальное поведение пользователей различных приложений для последующего формирования новых полезных привычек, используя новые версии инструментов технологии убеждения в сочетании с машинным обучением, а затем продавая их НКО и компаниям, продвигающим образование, здравоохранение или социальное обеспечение.

В условиях становления концепции «Индустрия 4.0» особую актуальность приобретает искусство инжиниринга, заключающееся в способности объединить физические и цифровые составляющие, в результате чего появляются киберфизические системы, представляющие собой особый вид цифровых инвестиционных проектов.

Несмотря на то, что многие потенциальные преимущества киберфизических систем (CPS) вызывают большие надежды, прошлый опыт цифровизации показал, что последствия новых внедренных технологий никогда нельзя полностью предсказать. Всегда есть непредвиденные последствия, некоторые из которых хорошие, некоторые плохие, а другие никогда не реализуются по-настоящему.

В отличие от более традиционных встраиваемых систем полноценная CPS обычно проектируется как сеть взаимодействующих элементов с физическим вводом и выводом, а не как автономные устройства. Это понятие тесно связано с концепцией робототехники и сенсорных сетей с интеллектуальными механизмами, присущими вычислительному интеллекту. Непрерывные достижения науки и техники улучшают связь между вычислительными и физическими элементами с помощью интеллектуальных механизмов, повышая адаптивность, автономность, эффективность, функциональность, надежность, безопасность и удобство использования киберфизических систем. Это расширит потенциал киберфизических систем в нескольких направлениях, включая: вмешательство (например, предотвращение столкновений); точность (например, роботизированная хирургия и производство на наноуровне); работа в опасных или недоступных средах (например, поисково-спасательные работы, тушение пожаров и глубоководные исследования); координация (например, управление воздушным движением, боевые действия); эффективность (например, здания с нулевым потреблением энергии); и увеличение человеческих возможностей (например, в мониторинге и оказании медицинской помощи).

Примеры CPS включают интеллектуальную сеть, автономные автомобильные системы, медицинский мониторинг, промышленные системы управления, системы робототехники и автопилотную авионику.

По мнению Э. Ли (Ли, 2015)55 приложения CPS включают автомобильные системы, производство, медицинские устройства, военные системы, оказание помощи, управление дорожным движением и безопасностью, управление технологическими процессами, производство и распределение электроэнергии, энергобезопечение, системы отопления, вентиляции и кондиционирования воздуха, самолёты, контрольно-измерительные приборы, управление водными ресурсами, поезда, физическую безопасность (контроль и мониторинг доступа), управление активами и распределенной робототехникой. CPS изменяет сектор транспорта, логистики, мобильность и быт людей пожилых и с ограниченными возможностями, энергиетику, критическую инфраструктуру, сельское хозяйство, продовольствие, экологию, безопасность и многие другие сферы.

Регулирование появляющихся киберфизических систем должно сопровождаться этическими стандартами и процедурами, которые в равной степени будут учитывать потребности и этические дилеммы исследователей, практиков, пользователей и разработчиков.

Нейронинтерфейс может, как способствовать снижению рисков искусственного интеллекта для человечества, так и может использоваться нейротехнологическими компаниями в деструктивных целях. Очевидно, что уже на современном этапе требуется теоретическая и эмпирическая перориентация исследований и практики применения цифрового поведенческого дизайна из сферы развития бизнеса в область защиты потребителей, разработку направлений здорового поведения, этических подходов.

II. Выводы

Применение технологий поведенческого дизайна при создании и использовании цифровых благ в политике и социально-политических процессах неуклонно и ускоренно растет. Цифровые и киберфизические технологии становятся важнейшим фактором трансформации экономического и общественно-политического устройства в современном мире.

Уже сегодня нейротехнологические компании нацелены на создание целостного интерфейса мозга, способного более тесно связывать биологический и искусственный интеллект. Нейрокомпьютерный интерфейс, как система для обмена информацией непосредственно между мозгом и электронным устройством, базируется на нейроробототехнике. Нейронный интерфейс способен абсолютно определять потребительское поведение в соответствии с проектом. Он сможет задавать, устанавливать потребительское поведение в диапазоне в соответствии с целями управления - от абсолютно рационального до иррационального, которое фактически отсутствует в эйнштейновской экономической науке.

Риски роста негативных последствий применения цифровых и киберфизических технологий поведенческого дизайна при создании и использовании цифровых благ в политике и социально-политических процессах целесообразно не игнорировать. Перспективными мерами государственной и общественной политики являются:

- информирование потребителей об использовании технологическими компаниями техник скрытой манипуляции, вредных для здоровья людей, особенно детей и подростков;
- распространение традиционной этики и нейроэтики в технологии через некоммерческие организации;
- стимулирование работы психологов (в т.ч. через профессиональные общественные объединения) в сфере улучшения состояния здоровья детей и подростков, а не в создании аддиктивного дизайна;
- разработка и проведение обучающих курсов «Цифровые зависимости: государственный и общественный контроль» для руководителей образовательных организаций, педагогических работников, для последующего просвещения родителей (законных представителей) школьников;
- разработка нормативно-правовой базы повышения качества информации, которая может удовлетворить потребности во вмешательстве в поведение как зависимых, так и не страдающих зависимостью людей;
- оценка и учет издержек общества от потребления вредных цифровых благ (в т.ч. аддиктивных).

Очевидно, что парадигма киберфизических систем, полученная в результате междисциплинарного синтеза, станет топливом для следующей технологической революции. Уже на современном этапе требуется теоретическая и эмпирическая переориентация исследований и практики применения нейронного интерфейса из сферы развития бизнеса, нейромаркетинга, в область защиты потребителей, разработку направлений здорового поведения, этических подходов.

До настоящего времени экономические (включая институциональные) и регуляторные (включая этические) аспекты, возникающие на стыке многих наук в свете развития киберфизических систем, имеющие важнейшее значение для будущего всего общества фактически не изучены, междисциплинарные знания не зафиксированы и не структурированы в экономической и других науках. Киберфизические системы представляют собой новую научную область, требующую собственных моделей и методов. Целостное исследование социально-экономической проблематики киберфизических систем, их общественного и государственного контроля и регулирования отсутствует в мировой науке. Что определяет актуальность дальнейшего построения экономической теории киберфизических систем и модели общественного и государственного контроля и регулирования генерируемым ими рынков благ на основе конкретизации их сущности, структуры, функций, специфики спроса и предложения, анализа эволюции концепций, оценки эффектов и рисков, опыта развития институтов и механизмов регулирования и саморегуляции.
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FELLOWS/ASSOCIATES OF MANAGEMENT AND BUSINESS RESEARCH COUNCIL

FMBRC/AMBRC MEMBERSHIPS

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Acknowledgments

Contributors to the research other than authors credited should be mentioned in Acknowledgments. The source of funding for the research can be included. Suppliers of resources may be mentioned along with their addresses.

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- Font type of all text should be Swis721 Lt BT.
- Page size: 8.27” x 11”", left margin: 0.65, right margin: 0.65, bottom margin: 0.75.
- Paper title should be in one column of font size 24.
- Author name in font size of 11 in one column.
- Abstract: font size 9 with the word “Abstract” in bold italics.
- Main text: font size 10 with two justified columns.
- Two columns with equal column width of 3.38 and spacing of 0.2.
- First character must be three lines drop-capped.
- The paragraph before spacing of 1 pt and after of 0 pt.
- Line spacing of 1 pt.
- Large images must be in one column.
- The names of first main headings (Heading 1) must be in Roman font, capital letters, and font size of 10.
- The names of second main headings (Heading 2) must not include numbers and must be in italics with a font size of 10.

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The recommended size of an original research paper is under 15,000 words and review papers under 7,000 words. Research articles should be less than 10,000 words. Research papers are usually longer than review papers. Review papers are reports of significant research (typically less than 7,000 words, including tables, figures, and references).

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a) A title which should be relevant to the theme of the paper.
b) A summary, known as an abstract (less than 150 words), containing the major results and conclusions.
c) Up to 10 keywords that precisely identify the paper’s subject, purpose, and focus.
d) An introduction, giving fundamental background objectives.
e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition, sources of information must be given, and numerical methods must be specified by reference.
f) Results which should be presented concisely by well-designed tables and figures.
g) Suitable statistical data should also be given.
h) All data must have been gathered with attention to numerical detail in the planning stage.

Design has been recognized to be essential to experiments for a considerable time, and the editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned unrefereed.

i) Discussion should cover implications and consequences and not just recapitulate the results; conclusions should also be summarized.
j) There should be brief acknowledgments.
k) There ought to be references in the conventional format. Global Journals recommends APA format.

Authors should carefully consider the preparation of papers to ensure that they communicate effectively. Papers are much more likely to be accepted if they are carefully designed and laid out, contain few or no errors, are summarizing, and follow instructions. They will also be published with much fewer delays than those that require much technical and editorial correction.

The Editorial Board reserves the right to make literary corrections and suggestions to improve brevity.
**Format Structure**

*It is necessary that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.*

All manuscripts submitted to Global Journals should include:

**Title**

The title page must carry an informative title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) where the work was carried out.

**Author details**

The full postal address of any related author(s) must be specified.

**Abstract**

The abstract is the foundation of the research paper. It should be clear and concise and must contain the objective of the paper and inferences drawn. It is advised to not include big mathematical equations or complicated jargon.

Many researchers searching for information online will use search engines such as Google, Yahoo or others. By optimizing your paper for search engines, you will amplify the chance of someone finding it. In turn, this will make it more likely to be viewed and cited in further works. Global Journals has compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

**Keywords**

A major lynchpin of research work for the writing of research papers is the keyword search, which one will employ to find both library and internet resources. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining, and indexing.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy: planning of a list of possible keywords and phrases to try.

Choice of the main keywords is the first tool of writing a research paper. Research paper writing is an art. Keyword search should be as strategic as possible.

One should start brainstorming lists of potential keywords before even beginning searching. Think about the most important concepts related to research work. Ask, “What words would a source have to include to be truly valuable in a research paper?” Then consider synonyms for the important words.

It may take the discovery of only one important paper to steer in the right keyword direction because, in most databases, the keywords under which a research paper is abstracted are listed with the paper.

**Numerical Methods**

Numerical methods used should be transparent and, where appropriate, supported by references.

**Abbreviations**

Authors must list all the abbreviations used in the paper at the end of the paper or in a separate table before using them.

**Formulas and equations**

Authors are advised to submit any mathematical equation using either MathJax, KaTeX, or LaTeX, or in a very high-quality image.

**Tables, Figures, and Figure Legends**

Tables: Tables should be cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g., Table 4, a self-explanatory caption, and be on a separate sheet. Authors must submit tables in an editable format and not as images. References to these tables (if any) must be mentioned accurately.
Figures

Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

Preparation of Eletronic Figures for Publication

Although low-quality images are sufficient for review purposes, print publication requires high-quality images to prevent the final product being blurred or fuzzy. Submit (possibly by e-mail) EPS (line art) or TIFF (halftone/photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Avoid using pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings). Please give the data for figures in black and white or submit a Color Work Agreement form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution at final image size ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs): >350 dpi; figures containing both halftone and line images: >650 dpi.

Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

Tips for writing a good quality Management Research Paper

Techniques for writing a good quality management and business research paper:

1. Choosing the topic: In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

2. Think like evaluators: If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

3. Ask your guides: If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

4. Use of computer is recommended: As you are doing research in the field of management and business then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

5. Use the internet for help: An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow here.
6. **Bookmarks are useful:** When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

7. **Revise what you wrote:** When you write anything, always read it, summarize it, and then finalize it.

8. **Make every effort:** Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

9. **Produce good diagrams of your own:** Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

10. **Use proper verb tense:** Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

11. **Pick a good study spot:** Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

12. **Know what you know:** Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

13. **Use good grammar:** Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice. Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

14. **Arrangement of information:** Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

15. **Never start at the last minute:** Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

16. **Multitasking in research is not good:** Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

17. **Never copy others’ work:** Never copy others’ work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

18. **Go to seminars:** Attend seminars if the topic is relevant to your research area. Utilize all your resources.

19. **Refresh your mind after intervals:** Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

20. **Think technically:** Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.

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21. **Adding unnecessary information:** Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

22. **Report concluded results:** Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

23. **Upon conclusion:** Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

**Informal Guidelines of Research Paper Writing**

**Key points to remember:**

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

**Final points:**

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

**The introduction:** This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

**The discussion section:**

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

**General style:**

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

**To make a paper clear:** Adhere to recommended page limits.

**Mistakes to avoid:**

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.
• Use paragraphs to split each significant point (excluding the abstract).
• Align the primary line of each section.
• Present your points in sound order.
• Use present tense to report well-accepted matters.
• Use past tense to describe specific results.
• Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
• Avoid use of extra pictures—include only those figures essential to presenting results.

**Title page:**

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

**Abstract:** This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

Reason for writing the article—theory, overall issue, purpose.

• Fundamental goal.
• To-the-point depiction of the research.
• Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

**Approach:**

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

**Introduction:**

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.

The following approach can create a valuable beginning:

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.
Approach:

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

Procedures (methods and materials):

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

*Materials may be reported in part of a section or else they may be recognized along with your measures.*

Methods:

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that’s all.

Approach:

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer’s interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

What to keep away from:

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.
Content:
- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

What to stay away from:
- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

Approach:
As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

Figures and tables:
If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

Discussion:
The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."

Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.
- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.
Approach:
When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.
Describe generally acknowledged facts and main beliefs in present tense.

The Administration Rules
Administration Rules to Be Strictly Followed before Submitting Your Research Paper to Global Journals Inc.

Please read the following rules and regulations carefully before submitting your research paper to Global Journals Inc. to avoid rejection.

Segment draft and final research paper: You have to strictly follow the template of a research paper, failing which your paper may get rejected. You are expected to write each part of the paper wholly on your own. The peer reviewers need to identify your own perspective of the concepts in your own terms. Please do not extract straight from any other source, and do not rephrase someone else's analysis. Do not allow anyone else to proofread your manuscript.

Written material: You may discuss this with your guides and key sources. Do not copy anyone else's paper, even if this is only imitation, otherwise it will be rejected on the grounds of plagiarism, which is illegal. Various methods to avoid plagiarism are strictly applied by us to every paper, and, if found guilty, you may be blacklisted, which could affect your career adversely. To guard yourself and others from possible illegal use, please do not permit anyone to use or even read your paper and file.
Please note that following table is only a Grading of "Paper Compilation" and not on "Performed/Stated Research" whose grading solely depends on Individual Assigned Peer Reviewer and Editorial Board Member. These can be available only on request and after decision of Paper. This report will be the property of Global Journals.

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