



Customer Experience Of Artificial Intelligence In Pakistan: The Oldaa Model

Shiza Farooq^{1*}, Dr. Sidra Pervez²

^{1*}PhD Scholar, Iqra University Islamabad (H9 Campus). shizafarooq27856@iqraisb.edu.pk

²Assistant Professor, Iqra University Islamabad (H9 Campus). sidra.pervez@iqraisb.edu.pk

Abstract

Advancement of Artificial Intelligence is a global phenomenon. This research investigates the customer experience (Cx) of Artificial Intelligence (AI) enabled platforms in Pakistan, focusing on popular platforms like Facebook, Google, Open AI's Chat GPT, and Deep fake, from a marketing perspective. Given the rapid advancement of AI technologies and the corresponding risks and sacrifices associated with their use, there is a substantial gap in the literature from a customer-centric viewpoint, particularly in the context of Pakistani cultural and behavioral patterns. Therefore, this research is rooted on basis of the BMW model of perceived sacrifices (PS) of AI which categorizes perceived sacrifices into Bafflement, Motive, and Wastage, integrating both established and newly identified factors specific to the Pakistani context. Through thematic analysis of 10 interviews, we present the OLDAA model as a framework to understand the customer experience of AI in Pakistan under the BMW model. These findings contribute significantly to understand how perceived sacrifices shape user interactions with AI technologies exclusively in Pakistani setting, providing valuable insights for marketers and technologists aiming to optimize AI solutions in emerging markets.

1. INTRODUCTION & RESEARCH BACKGROUND

Artificial intelligence (AI) was perceived as a thing of science fiction few years back but now it is changing how consumers eat, sleep, work, play, and how they maintain their relationships. Reflect the diversity of usage and interactions consumers might have with AI during 24 hours, from decision making through conversations with Chat Gpt to deepfake's entertaining videos and images which possess the muscle to alter reputations and lives in a matter of minutes and seconds. With this advancing omnipresence of AI in lives of consumers, the marketers must operate in organizations with a philosophy and principles which are fashioned according to computer science fundamentals. The objective of creating technical excellence for software developers and IT experts may however, not certainly align with marketers' objective of creating valuable consumer experiences. For instance, the algorithms are often characterized as neutral tools assessed on accuracy and efficiency (Green and Viljoen 2020), the approach that may neglect the social and individual intricacies of the contexts in which AI is progressively deployed. Therefore, however the advancing AI can improve consumers' lives in definite and appropriate ways, a failure to integrate behavioral insights into these technological developments may not only weaken consumers' experiences but even sum up the whole scenario in to a fiasco with AI. This article hence, aims to bridge these two perspectives of technological advancement and incorporation of behavioral insights by acknowledging the benefits and risks associated with AI for consumers on one hand. And by constructing and integrating the sociological and psychological scholarship to inspect the experience of consumers in their interactions with AI. Revealing the tension between usage and sacrifices of AI, this study offers recommendations to enlighten managers and scholars exploring these challenges of AI experience.

This research is hence designed to respond to the call from the Marketing Science Institute to investigate "the role of the human/ tech interface in marketing strategy" and to assemble a more scholarly attention to situations where "customers face an array of new devices with which to interact with firms, fundamentally altering the purchase experience" (Marketing Science Institute 2018).

The core research objective of this study is to clearly understand the customer experience of Artificially Intelligent (AI) platforms, under the light of explored perceived sacrifices of AI. We begin by understanding the perceived sacrifices associated with AI through BMW model of perceived sacrifices of AI, and offering a framework that conceptualizes the experience of AI as a unification of five stages.

1.1. Research Objective

The research objective of this study is to explore the customer experience of AI enabled platforms under the light of given BMW model of perceived sacrifices of AI enabled platforms in Pakistan.

2. LITERATURE REVIEW

2.1 Artificial Intelligence

Artificial intelligence (AI) has no single universal concept. United Nations' Information Economy Report (UNCTAD 2017, 5) proposes that "AI is the ability of machines and systems to acquire and apply knowledge, and to carry out intelligent behavior". This may include execution of various cognitive tasks, such as sensing, processing oral language, learning, reasoning, making decisions, and representing an capability to deploy objects accordingly. Intelligent systems syndicate big data analytics, cloud computing, machine-to-machine (M2M) communication and IoT for performing its operations and learn further. The AI software enables platforms and robots to behave ever more independently from the verdicts of their human creators and operators. AI is currently limited to relatively specific tasks, far from general, compliant intelligence that the humans possess. But advancement of AI is increasingly incorporated into many products and services around the globe. Recent studies have reflected that artificial intelligence relies on imitation of human aspects of intelligence, and this phenomenon integrates the machines' ability to communicate (Riedl 2019). Scholarly studies report the artificial intelligence is not simply communicator machines, but developments of AI are increasing user interaction with the technology and AI-empowered devices are being gradually invested into people's routine lives (Campolo 2017; Raine and Andersen 2017).

"Moreover, communicative AI incorporates conversational agents, social robots, and automated-writing softwares. These technologies are profound implications of expansion of the sub-field of artificial intelligence, namely: Natural Language Processing (NLP) and Natural Language Generation (NLG). Both, NLP and NLG, operate for processing human communication. This means facilitating machines to make sense of messages communicated in human language, and then producing messages in human language (Allen 2003). Studies into communicative AI suggest that AI-enabled technologies differ in how they operate as a communicator, from interactive converser to content producer. Conversational and voice-based agents, such as Amazon's Alexa, assist humans by responding them vocally to their queries and requests. Personified robots intermingle vocally and nonverbally with people (Peter and Kühne 2018). "A social bot is a computer algorithm that automatically produces content and interacts with humans on social media, trying to emulate and possibly alter their behaviour" (Ferrara et al. 2016, 96). Over the last ten years, social bots have occupied social media platforms and people are getting familiar with its functions. In journalism, news-writing programmes dig out narratives from raw data that appear alongside human-produced stories and cannot be easily notable from them (Graefe et al. 2018). There is one common aspect of all these AI technologies. AI technologies operate as a communicator, which is a role that has been largely linked with humans since decades (Rogers 1986)."

There is a growing scholarly work that shows how humans and AI-enabled platforms are collaborating with each other for massive advancements. But with an ever-growing AI technology, the behavioral insights of this integration of AI in daily human life is a distinguished and noteworthy phenomenon.

2.2. AI and Pakistan

Pakistan is a developing country with massive potentials for technologies like AI. The economy of Pakistan is a hot cake for revolution through such technological advancements with calibrated integrations in every industry of the country. "In the Public Sector of Pakistan, the government has taken various steps to introduce digitalized technology in light of the global "Industrial Revolution 4.0." The planning commission of Pakistan issued "Vision 2025" for the country in 2013, where the emphasis was given to the development of digitalization in Pakistan named "The Knowledge Revolution." The document contains a roadmap to public-private consortium in the Information Technology (IT) sector and enabled educational institutions to develop curriculums accordingly. Under Pillar III of the document, E-governance strategies have been planned by the government, which focuses on the up-gradation of the IT infrastructure and a close connection between the government and its citizens along with the establishment of "E-government," "E-health," "E-education," and "E-commerce". Globally, Pakistan has an AI index of 40.22 compared to the US, which has an index of 85.72, India with 63.67, and China with 70.84 according to the "Government AI readiness index 2022." According to Oxford Insights, (2023) It ranked 92nd in the world out of 181 and 13th in the region out of 16 countries. In research conducted on the responses, accessibility, mobile friendliness, and content accessibility on public organizations' websites in Pakistan, it was found that only 12 from the 50 web pages reported less than fifty percent of issues in accessibility and very poor conformance according to international standards in 2021. Artificial Intelligence Institutional Adoption in Pakistan in light of the digital revolution, different technological initiatives have been introduced into the system by public service organizations to enhance the digitalization capabilities (Bilal, M., et al., 2019). The year 2020 saw the establishment of the Special Technology Zones Authority (STZA) for the development of the IT sector of Pakistan, whose aim is to establish Special Technology Zones (STZs) in the country. In light of Vision 2025, the government of Pakistan developed twenty-two software technology parks in the country in the year 2022 and a plan to increase them to 40 was underway by the year end. Sino-Pak Center for Artificial Intelligence (SPCAI) was established in 2022 to provide solutions to the daily life challenges of the industry in the country (The News, 2022). The institute provides solutions in the field of intelligent biomedical applications, smart city urban planning, smart agriculture, applied neural interface, computer vision, robotics, deep learning, system designs, natural disaster management, and the Internet of Things (IoT) for different stakeholders (PAF IAST., 2021). Another institution established by the government is the National Center of Artificial Intelligence (NCAI) Secretariat, Pakistan which offers its services to local industry, the Higher Education Commission (HEC), along with other government departments in the field of AI, machine learning, deep learning, Image Recognition, and Automatic Speech Recognition (ASR) equipping them with the latest technology as a part of the Vision 2025. HEC has also approved thirtyeight universities in Pakistan to offer AI in their curriculum (NCAI., 2021). HEC also established six national centers under the Public Sector Development Program (PSDP) 2018-19, that offer research in the field of AI

under the names “National Centre for Cyber Security” (NCCS), “National Centre for Robotics and Automation” (NCRA), “National Centre for Artificial Intelligence” (NCAI), “National Centre for Cloud Computing and Big Data” (NCBC), “National Centre for GIS and Space applications” (NCGSA), and “National Centre for Livestock Breeding, Genetics and Genomics” (NCLBG&G) Edu Rank., (2021). The purpose of these facilities is to enhance capacity building of public and private institutions of the country through offering their consultancy in their respective fields. Healthcare is another sector where Artificial Intelligence is adopted in some institutions of the country. Technological advancement in the field of Artificial Intelligence is crucial for the healthcare industry of Pakistan, which, if it does not develop, will not reap the benefits of technological breakthroughs. Khan, M. I., et al. (2022) proposed that the use of AI in medical services has been welcomed by practitioners because of its positive role despite a lack of practical knowledge of the technology which they are willing to adopt. The role of advanced AI in the medical profession, whether private or public, is a welcoming sign for countries like Pakistan that can benefit from the AI advancement and improve their services. Another field where the public sector investment in AI in Pakistan is granted is the educational institutions especially higher education institutions and research facilities established under the umbrella of the Higher Education Commission (HEC), Pakistan. Educational institutions have started adopting AI to meet user needs but the constraints in implementing it fully of comprise budget, time, and technology-equipped staff. Under the HEC funding policy related to Artificial Intelligence, different research facilities have been set up within different universities that are building advanced digital capabilities at institutional levels and offering expertise to the industry both in the government and private sectors (Ali, M. Y., et al., 2022). The central bank and other economic organisations have been testing Artificial Intelligence in different economic and financial modelling tools, although the technology is not fully implemented. Artificial Intelligence has also been used in economic models forecasting in Pakistan to test conventional forecasting techniques with Artificial Neural Networks (ANN) models where the use of Artificial Intelligence predicted better results compared to traditional methods. Other models that are used by AI networks include decision tree, Support Vector Machine, Bayesian Classifiers, K-means clustering, and Random Forest. These models have also been used on an experimental basis in different institutions of the country for research and scientific purposes. It has also generated reliable content for use by public and private institutions. For instance, the use of ANN modeling in rainfall predictions has also been tested in Pakistan and is found to be much more accurate than the mathematical conceptual methods already being used by the metrological department (Haider, A., & Hanif, M. N., 2009). The use of Artificial Intelligence is also found to be facilitating the human resource functions of government operated institutions in Pakistan (Ghumman, A. R., et al., 2011). In certain institutions, there is an urgent need for AI adaptation for improved services as Pakistan is behind the global standards in these places. The lack of using Artificial Intelligence in the legal system of Pakistan to help legal system reforms and speedy case processing is also found to be lagging behind the UK, Australia, and India due to which the process is time taking (Shah, S. A. A., et al., 2021). Other uses of AI are in the public sector organizations where the initiatives are still lagging include Smart electricity and water distribution networks, shelf management, crop-yield prediction, customer segmentation, stock market prediction, financial frauds prediction, crime prediction and cyber-attacks prediction (Shafiq, J., Shafiq, H. M. S., & Sarwar, M. S., 2022). This is challenging because the majority of the AI projects are still in testing phases and their implementation on a large scale has not been attained by the public sector organizations so far. Digital technologies like Artificial Intelligence, cloud computing, cyber security and digital application platforms have also found its uses in the defense forces globally where warfare modelling has improved as a result of advanced decision-making capabilities of the machines including robots and machine learning models.

The potential challenges for AI adaption in government include data challenges, social, societal, and economic issues, organizational adoption issues, management compatibility, skill set, understanding, ethical and acceptability challenges, political, legal, policy drafting and implementation challenges (Zuiderwijk et al., 2021). Adaption of AI and digital technologies have made policy-making easy for various government institutions for data collection and service delivery but the biggest challenge for the government will be in cyber security that, if not resolved, could bring the entire AI system to a complete halt within hours (Zeeshan Javed, 2021).

The challenges for AI adaption in the public sector organizations in Pakistan include lack of infrastructure development, standardization of inter-departmental databases, adoption issues, and cyber security risks (Yongrong Xin et al.).

Eight challenges to Pakistan's AI transformation are; work ethics and culture, lack of knowledge, frequently changing leadership of the country, delays in funding, no software lack of secure and reliable digital access in the country. procurement rules, missing national data governance policy, context-driven digital payment gateways, and lack of secure and reliable digital access in the country (Rasool & Malik., 2020).

The challenges in digitalized economy include a lack of IT infrastructure, lack of awareness, and market conditions are some of the challenges for the digital economy of Pakistan (Mahrose Nadeem et al., 2023).

Individual perception of technology, weak regulations, limited resources, low technological maturity and organizational support (Xu & Baigy, 2022). Amjad, (2023) proposed the low technological skills, unavailability of data, data privacy, Complex Human resource departments, resistance to technology, fear of unemployment, lack of data and infrastructure non-availability (Bibi, Munazza, 2019). Hefty costs, negative experiences with technological installment in the past, governance issues, resistance by the bureaucratic structures, and decision-making issues of man versus machine autonomy (Maciej Kuziemski & Gianluca Misuraca, 2020).”

2.3. BMW model of Perceived sacrifices of AI in Pakistan

The study of risks and sacrifices is very important to be conducted because such perceptions and notions have been greatly discussed and displayed in sci-fi movies, tycoons like Elon Musk, news and articles about technical giants and practically almost everywhere. The customer centric research about the advancing AI technology is lacking the muscle in the existing body of literature. The existing body of research have also discussed such perceptions to bridge reality with theory but there still is a

lot of work to be done in this area. Therefore, this study relies over existing perceived sacrifices about AI in Pakistani context which are mentioned in the BMW model of perceived sacrifices of AI (BMW model of PS of AI) and thus the core aim of this research is to better understand and investigate how these perceived sacrifices are shaping the overall customer experience of AI (Cx of AI) in Pakistan from a customer centric view. As Pakistan stands out as a unique set of cultural and behavioral nation on Hofstede's model. Therefore, such understanding of Cx of AI in Pakistan is of sheer importance. BMW model is suggested by Shiza Farooq, accepted for publication in the special issue of AI-Kashaf Journal 2024. Given below is the brief about BMW model of perceived sacrifices;

“The BMW model stands for Bafflement, Motive and Wastage. This BMW model of perceived sacrifices of AI incorporates all the existing perceived sacrifices in literature, along with a variety of new reflections over the concept in Pakistani context. These new ideas, views, experiences, descriptions and anticipations in Pakistan regarding perceived sacrifices of AI could not have been possibly adjusted in the existing themes of Perceived sacrifices of AI in literature.

2.3.1. BAFFLEMENT

In this model, bafflement is defined as any aspect linking to psychology and emotions of the user that is perceived about the usage of AI, that may contribute negatively to the entire experience of AI. The following notions have been coded and recorded under this theme during the interviews:

Confusion, irritation, damaging, puzzles, complexities, inability to control (mentioned in literature already), tricky, exhaustive, hurtful, social isolation, disturbing / disturbance, lack of communication, anxiety, lack of human interaction (mentioned in literature), distraction, addiction, undue necessity, high dependence, obsession, habit, stress, hobby, delusion etc

2.3.2. MOTIVE

Motive in this model is defined as any negative image of AI perceived by the user that he/ she associates with the AI without clarity, certainty or authentic ground. The following notions have been coded and recorded under this theme in the collected data:

Hidden agenda, question on privacy (mentioned in literature), cult/ dark practice, non-religious, linked to dark web, big data, surpass human, degrade humanity, question on human intellect, dark plot, power gain, indulgence, motive of distraction, means of benefit to any specific entity, conspiracy etc.

The most common aspiration under this segment has been a comment “AI yahoodi sazish hy” meaning “AI is a conspiracy”. This notion has been recorded at such a large intensity, that prevails in to a whole school of thought.

2.3.3. WASTAGE

The dimension of Wastage in BMW refers to users' perception of fear associated with any undue loss through usage of AI. The following notions have been coded and recorded under this theme during the interviews and data collection:

Loss of time (mentioned in literature), loss of money (discussed in literature), loss of skill, loss of memory, loss of life, loss of social circle, loss of energy, loss of productivity, loss of value, loss of integrity, loss of effort (mentioned in literature), loss of connectivity, loss of control (mentioned in literature), loss of resources etc.

It is important to note that all the aspects of this model depend on the connotation of perceptions. The meanings attached to every perception gives a reasonable ground for a satisfactory allocation of notion into one of the dimensions of the model. Since the study is an interpretive offering in nature, therefore, the final outcome, the BMW model of perceived sacrifices of AI, is based on the context.”

It is worth noticing that the BMW model is also designed specifically based on Pakistani context, therefore, the perceived sacrifices of AI mentioned in this model are a best fit to study the Cx shaped through this set of perceived sacrifices in the same context of Pakistan.

2.4. Customer Experience of AI

The research about customer experience of AI is still in its beginning chapters in the progression of times. “A recent study by Nisreen Ameen and colleagues investigated the role of artificial intelligence (AI) in enhancing customer experience within the retail sector, particularly in relation to beauty brands. The study presents a theoretical model based on trust-commitment theory and service quality model, examining factors like trust, perceived sacrifice, and relationship commitment. An online survey involving 434 respondents was analyzed using partial least squares structural equation modeling. Key findings suggest that trust and perceived sacrifice significantly mediate the relationship between AI-enabled service quality, convenience, personalization, and customer experience. The study underscores the importance of AI in improving customer interactions through personalized and quality service, while also highlighting the potential issues of trust and sacrifice in the adoption of AI technologies.”

In another research framework, Nikola Naumov examined the implications of AI, robots, and service automation (RAISA) on service quality within the hospitality sector. The paper explores how these technologies influence guest experiences and operational efficiencies, posing both opportunities for innovation and challenges for maintaining personal guest interactions. Marinchak, C. M. (2018), investigated the impact of AI on marketing, particularly through automation and machine learning, and how these technologies redefine consumer engagement and business strategies in the digital era. Naumov, N. (2019). Investigated the roles of robots, AI, and service automation in enhancing service quality, with a specific focus on their application within the hospitality industry, and their potential to improve or disrupt traditional service paradigms and concluded that while these technologies improve efficiency and reduce costs, there is a critical need for human oversight to

maintain quality and address complex customer needs. The findings suggest that integrating human skills with AI capabilities can lead to superior service outcomes.

While the research about experience of AI enabled platforms have been given more importance with every passing day due to fast paced development of AI technology. On other hand, the experience of AI is a subject of interest for marketing researcher. The subject which has not been given due attention.

3. RESEARCH METHODOLOGY

This is a qualitative study, a phenomenology where customer experience in the context of AI-enabled platforms is potentially approached from an interpretive perspective. where data is collected through 10 open ended detailed interviews. These interviews are also audio recorded for clarification and then manually transcribed. Out of these 10 interviews, 5 open ended interviews have been taken from IT professionals in Pakistan and 5 open ended interviews from general users of these platforms. Thematic analysis is applied manually over the collected data.

Interpretivism emphasizes understanding and interpreting the subjective meanings individuals assign to their experiences and the social and cultural context in which those meanings are embedded. It aims to explore the complexities of human experiences and the ways people construct and interpret their realities (Creswell, 2018). In this study, the focus is on exploring the perceptions and interpretations of sacrifices associated with AI within a specific cultural context. This research paper aims to uncover the subjective meanings individuals attribute to the AI technology to understand their overall experience of AI. This focus on understanding how participants interpret and make sense of their experiences aligns with the interpretivist perspective. As the study specifically targets a particular culture, recognizing the influence of the cultural context on individuals' perceptions and interpretations. Interpretivism emphasizes the role of culture in shaping meanings and understanding human experiences. Therefore, this investigation of perceptions regarding Artificial Intelligence usage in Pakistan is clearly deemed as an interpretivist study.

3.1 Sampling and Data Collection

Following Malhotra and Galletta (1999), purposive sampling had been used, which was based on two main conditions for conducting the interviews: Individuals (1) must be at least 18 years old; and (2) must be well equipped with latest technology and skilled professionals of IT. It has been recommended by researchers, that qualitative studies require a minimum sample size of at least 12 respondents for accuracy of findings (Clarke & Braun, 2016; Fugard & Potts, 2015; Guest, Bunce, & Johnson, 2006). However, the ideal number of participants is subjected to the qualitative research approach. According to Creswell, W. & Creswell, D. (2018), Narrative research generally includes 1-2, phenomenological study includes 3-10, grounded theory includes 20-30. Therefore, a sample of 10 respondents is deemed sufficient for this analysis. Thus, a succession of 10 in-depth interviews have been led with open ended questions about the usage and experiences of AI enabled platforms in Pakistan, specifically Google, Facebook, Deepfake apps and Chat gpt.

3.2. Data Analysis

(Braun & Clarke, 2006) Thematic analysis had been then applied over the data collected through interviews, to shape up the data into meaningful themes. Thematic analysis of interviews is a widely used method in qualitative research, and its origins can be traced back to various scholars. However, Braun and Clarke's (2006) paper "Using thematic analysis in psychology" is one of the most influential works on this method, and it has become a frequently cited reference for the conceptualization and application of thematic analysis in qualitative research. The collected data has been transcribed to form codes and themes. Manual coding procedures have been applied over the transcribed data to extract meaningful codes.

It was important to establish a systematic and organized approach to ensure accurate and meaningful analysis while coding transcriptions of interviews. Interview transcriptions were read multiple times to gain a comprehensive understanding of the content. Notes were taken, important sections were highlighted on the transcriptions, and recurring patterns were identified. A set of categories of possible key themes, concepts, or ideas in the interviews, was extracted to develop a Coding Framework. These codes were tested to be mutually exclusive and collectively exhaustive, to cover all relevant aspects of the data without overlapping. Using the mentioned coding framework, Transcriptions were coded as relevant codes were assigned to each segment of text. Consistency has been ensured in applying these codes, by adhering to clear definitions and guidelines for each code.

Coded data has been Periodically reviewed to ensure its accuracy and relevance. Inconsistencies or segments that required further clarification were refined and adjusted. Once the coding process was nearly completed, coded data was analyzed to identify patterns, relationships, and key findings. Thematic analysis was then used to explore and interpret the data based on the coded themes. The entire coding process of this qualitative analysis had been an iterative process, and it required multiple iterations of coding, analysis, and refinement to reach meaningful insights.

By identifying overarching concepts or patterns related codes were grouped together to convert codes into meaningful themes. Based on similarities, differences and relationships, similar codes were grouped into clusters. Descriptive Labels were generated for each cluster of codes. These labels succinctly represented the content and meaning of the codes grouped within each cluster. Themes were refined by reviewing the coded data within each cluster and ensuring that the codes within a theme share consistent characteristics or meaning. Each theme was then further defined with clear boundaries and criteria to guide this analysis.

3.3 Reliability of Data Collection and Analysis

All the interviews were conducted and recorded in audio video tapes by the core researcher herself. However, every interview and data collection activity were performed in the presence of two experienced research members who also helped in

transcribing the collected data afterwards. These two were asked to execute credibility checks on the data analysis to keep the analysis pace in accordance with best practice guidelines for qualitative analysis to minimize the influence of bias from a single researcher (Elliott et al., 1999). Specifically, one of these two researchers was asked to check if the original extracts chosen supported the developing themes. Moreover, these researchers kept a strict check of structure of the original analysis. The audio video recordings truly helped during transcription process. The contact information of the interviewees was also taken through consent forms and they were contacted on various accounts to eliminate any confusion or ambiguity.

4. RESEARCH DISCUSSIONS AND FINDINGS

This section encloses within the details and discussion about the analysis from data collection till final outcome.

4.1 The Research Process and Statics During Analysis

During the data collection phase, the following stats of the interviews were duly noted as shown in table 4.1.a.

Table 4.1.a. Basic Statistics of Interview Responses

Basic Response Statistics	
Total number of Interviews conducted	10
Number of IT professionals	5
Number of Non-IT AI platform users	5
Average Number of Questions asked per interview	12
Average number of words per response	250
Number of words in longest response	8900
Number of words in shortest response	3
Total number of words in interviews taken from IT Professionals	107500 approx
Total number of words in interviews taken from non-IT AI platform Users	225500 approx
Total number of words in all interviews	333000 approx

During thematic analysis, the transcriptions of receipts were visited multiple times. Two copies of transcripts were given to all three researchers. Six copies of same transcripts were distributed in total. Each researcher thoroughly read through these transcriptions and highlighted the relevant information. The relevant information that was highlighted by each researcher was then noted in the form of excel sheet and therefore, three excel sheets were prepared by three researchers separately respectively. The researchers also assigned possible codes to the highlighted text in transcripts. These possible codes were also mentioned in front of every excerpt in the excel sheets. These sheets were then compared in a meeting, and every excerpt and code were matched for final compilation of a single sheet. Every meaningful word in excerpts and all possible codes were given due importance through thorough discussion while constructing the final excel sheet of excerpts and codes. These codes were discussed in several prolonged meeting discussions until final themes were established and defined. The Table 4.1.b shows the basic stats of this thematic analysis at its initial stages.

Table 4.1.b. Stats of Thematic Analysis Initial codes and Themes

Thematic Analysis Initial Codes and Themes	
Number of highlighted excerpts	450 approx
Number of meaningful excerpts assigned and grouped into Initial codes	412
Positive Comments	161
Negative Comments	251
Number of Initial Codes	35
Average Number of Excerpts per Code initially	11.77
Average Number of Codes per theme	7
Number of total initial Themes	7

The table 4.1.c. given below depicts the initial layout of themes along with their codes and examples of respective excerpts.

Table 4.1.c. The Initial Sheet of Themes, Their Codes and examples of Excerpts

THE OLDAA MODEL						
EXCERPTS TO CODES TO THEMES						
No.	EXAMPLES FROM THE EXCERPTS	NUMBER OF EXCERPTS IN THIS CODE	CODES	NUMBER OF CODES IN THIS THEME	THEMES	
1	"you cannot ignore what AI has been offering on the whole"	34	OFFERS	7	OFFERING	
2	"there are many platforms that offer deepfake facilities now, one just needs to know thw potential market"					
3	"obviously gpt is a big help for students as well as professionals even non professionals"	27	HELPS			
4	"I cannot help myself to not to use gpt at work"					

5	"It really helps if you know what to ask gpt and how"				
6	"Nothing could help better than Google or GPT in such assignments"				
7	"facebook isnt only a social media platform, it is the fundamental mode of online existance now a days."				
8	"GPT IS THE NEED OF THE DAY!"	17	ESSENTIAL		
9	"gpt is more of a friend who is esential to many people these days"				
10	"Like Facebook was used to get the information insights"	13	USE		
11	"Boht uses r abuses hain har app k it depends on the person using it"				
12	"the features are good"				
13	"There are many perks and benefits for every specific feature we introduce and people are using it like crazy"	11	SPECIFIC FEATURES		
14	"however so many are benefitting from it"				
15	"Even the robotics have tremendous benefits associted with them for humans"	14	BENEFIT		
16	"It works as a mobile fascility of having everyone and evrything at the tip of your finger"	6	FACILITY		
17	"There is no definite pros or cons, it is not always going to facilitate without anything in return"				
18	"No other options like it"	21	LESS OPTIONS		
19	"others don't match or even close"				
20	"there are limitations and we get violation alerts by bigger party such as google to limit our access"	15	LIMITATIONS		
21	"my parents would limit my access or usage time"				
22	"There are restrictions from higher regulatory bodies otherwise"	7	RESTRICTIONS		
23	"Sometimes we are bounded by time and nature of the tasks to go into these depths and understand everything"				
24	"So the organization does not have access to those major AI tools as for now"	18	LACK OF RESOURCES	7	LACK OF ALTERNATIVES
25	"but a layman usually lack these resources"				
26	"there are limitations and we get violation alerts by bigger party such as google to limit our access"	6	LIMITED ACCES		
27	"Poor wifi access"				
28	"affordability also is a factor of consideration while choosing it"	5	AFFORDABILITY		
29	"May be there are other options of better versions but out my reach and affordability"				
30	"so in times like these, google maps is the only option"	10	BEST/ONLY OPTION		
31	"out of all the options, it was the best option to ask gpt"				
32	"Not only enjoy but now dependant on these mechanisms in dailylife"	28	DEPENDANT		
33	"Yes we all have been really dependent on AI"				
34	"I Have to rely on AI mediums"	12	RELY		
35	"so one counts on it for these matters too"				
36	"a fulfillment of doing it without asking for help from anyone else"	6	FULFILLMENT	7	DEPENDENCY
37	"To fulfill my responsibilities and tasks on time"				
38	"Using AI is an essential fashion more of a status quo thing"	9	TREND/FASHION		
39	"Using gpt is a fascination for my boss, it is more like a trend at our work place"				

40	"So the deepfakes are used for infinite purposes from politics to common mans life"	4	PURPOSE		
41	"The only purpose is to take over human mind"				
42	"I think this technological advancement is a decline of human intellect and creativity"	17	ADVANCED		
43	"AI ki advancement tu undoubtedly bana re hy easy life boht se tareeqoon se"				
44	"one tuely needs it in everyday life so cannot negate the impotence"	9	NEED		
45	"so all employees need it as a necessity of work"				
46	"people would associate one platform with other but there are no matches"	10	ASSOCIATION		
47	" place for association and comfort"				
48	"There is a link, a connection, an association the medium itself has so many ways to make or break things"	12	LINK		
49	"So every person will have a deeper link with an AI than any other human"				
50	"Orkut ki memory he reh gyi hy"	7	MEMORIES		
51	"nae easi koi khas affiliation ya memory nae hy but haan aik adat hojati hy"				
52	"I love killing my time on it"	4	LIKLIHOOD		7
53	"I like the fact you can let your opinions heard on Twitter (X)"				
54	"I do feel a connection with snapchat streak family"	9	CONNECTION		
55	"no there is no connection with tiktok but my followers do have a worth somehow"				
56	"To clearly mention the extent to which it owns you and you own it"	5	OWNERSHIP		
57	"Like you own it"				
58	"So yes Netflix is family when family is away"	4	FAMILIARITY		
59	"AI nae ban sakta apka no matter ap kitna familiarize hojaen is se"				
60	"dil ker ra hota hy title daikh k play kr daikhy insan easay he viral be hojati hain random clips aur videos top pe ati hain phir r ander ni hota kuch b"	6	URGE		
61	"Urge to check my followers again and again"				
62	"Time and again repeatedly played "	12	REPEATED		
63	"For repeated checks"				
64	"Life depends on it"	10	LIFE		
65	"Massive part of life"				
66	"In a habit to counter check my tasks with it"	6	HABIT		7
67	"Using it is a permanent habit and I usually cant help it even in times of urgency"				
68	"Like craving for the night to relax and check my social media and browse through"	7	CRAVING		
69	"he is so little but is always craving and yearning for my mobile phone"				
70	"Yes it definitely is a weakness"	15	WEAKNESS		
71	"Call it a weakness or strength but this is how it is"				
72	"Must read through all comments and analyze"	16	COMPULSION/ADDIC TION		
73	"compulsarily imposed on my being to check out every new comment on my posts"				

In the first column of the given table are the serial number of excerpts. Afterwards at least two excerpts from the interview transcriptions are given as examples for every code. After excerpt examples, the next column shows the number of excerpts

present against each code. The second last column on the right shows the number of codes in respective theme and finally the last column represents the final themes extracted out of this analysis.

On the whole, the final outcome, the themes remained constantly same after a series of discussions over several confusions during analysis. Coincidentally, every theme in the initial phase was constituted over 7 codes initially. Or simply 7 codes were united to give birth to a self-defined meaningful theme. The consistency of union of seven codes under each theme was completely unconscious and coincidental and it remained the same till final version of the outcome. However, the excerpts were over lapping between multiple codes on certain instances. For instance, the excerpt on number 20 and number 26 were same and repeated under different codes i.e. limitations and limited access under the “lack of alternatives” theme. The confusion was removed by renaming the code “limited access” as “accessibility”.

Another code under the same theme labelled as “best/only options” seemed to appear as confusing one. This too was renamed as “Options” to remove any complexities. Another replication of codes was ‘link’ and ‘connection’ in the “Affiliation theme. To remove this confusion and fuzz, the codes ‘link’ was renamed as ‘affiliation’ itself which later clearly justified the theme on the whole too. Several such steps were taken until the themes started appearing reasonably well defined and nourished with proper codes. The table 4.1.d shows the final set of codes to serve as dimensions for these inclusively finalized themes of the final model of this research.

4.1.d. Final Themes and their Dimensions

FINAL THEMES WITH THEIR DIMENSIONS	
THEMES	FINAL DIMENSIONS
OFFER	OFFERS
	HELPS
	ESSENTIAL
	USE
	FEATURES
	BENEFIT
	FACILITY
LACK OF ALTERNATIVES	LESS OPTIONS
	LIMITATIONS
	RESTRICTIONS
	LACK OF RESOURCES
	ACCESSIBILITY
	AFFORDABILITY
	LACK OF OPTIONS
DEPENDENCY	DEPENDANT
	RELY
	FULFILMENT
	TREND/FASHION
	PURPOSE
	ADVANCE/MODERN
	NEED/REQUIREMENT
AFFILIATION	FAMILIARITY
	AFFILIATION
	BONDING
	ATTACHMENT
	CONNECTION
	OWNERSHIP
	ASSOCIATION/ENGAGEMENT
ADDICTION	WEAKNESS
	URGE
	ATTRACTION
	HABIT
	CRAVING
	COMPULSION
	ADDICTION

The above given themes were collectively converted into a model after further clarifying and illustrating their definitions to depict the experience of AI enabled platforms. Therefore, finally the OLDAA model is the ultimate finding and outcome as a result of the thematic analysis of 10 interviews conducted in this research.

4.2 The OLDAA Model

OLDAA model is basically a set of themes/ aspects which assess the customer experience of AI for end users in Pakistan under the discussed BMW model. OLDAA model stands for Offering, Lack of alternatives, Dependency, Affiliation, Addiction. The definitions of the themes of OLDAA model are given in table 4.2.a below.

4.2.a Table of OLDAA Model Definitions of the Themes

THEMES	DEFINITIONS
OFFERING	Offering is referred as the set of services, advantages and facilities offered for an end user by an AI platform.
LACK OF ALTERNATIVES	Lack of alternatives is summed as a theme of repeatedly appearing codes such as, options, features, cost, skill set, etc. This theme refers to the exclusivity of the AI platform for the end user.
DEPENDENCY	Dependency is summed as a theme of repeatedly appearing codes such as fulfillment, trendy, follow, purposiveness, useful, much needed, advanced, effective, better means of, can't perform without. This theme depicts the extent and how user is forced to use AI platforms.
AFFILIATION	Affiliation is summed as a theme of repeatedly appearing codes such as, memory, association, favorite features, likelihood, etc. This theme depicts the end user's association with the AI platform.
ADDICTION	Addiction is summed as a theme of repeatedly appearing codes such as urge, likelihood of using, checking time and again, used to it, habit, cannot afford to, impossible without, must do, etc. This theme refers to the intensity of urge of the user to use the AI platform/service.

Based on the given definitions, the themes were arranged into a proper format. After a series of discussions between the team of three researchers and a supervisor, the decision was made to construct the model in the form of a pyramid. It was decided to arrange a pyramid model in a way to start off with the descending order from the base to the top. Thus, the theme "Offer" was given the largest segment in the base of the pyramid and the 'addiction' theme was placed at the top. Such an arrangement was based on an empirical observation to specify the progression of themes in the model which shall later be explored by future researches. The final model shaped in a hierarchical pyramid is shown in the figure 4.2.b below.



4.2.b The OLDAA Model

5. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

This research is a pioneer study bridging BMW model of perceived sacrifices with customer experiences in Pakistani setting. Such research problems have not been previously thoroughly discussed or given due consideration by researchers in Pakistan. Therefore, this study has been conducted qualitatively to gather rich data insights. This qualitative nature of the research opens the opportunity for future researchers to investigate the similar phenomenon through quantitative measures or validate the similar phenomenon using quantitative or triangulation methods.

Another limitation in the scope of this investigation is that it is only limited to Pakistani dynamics. The similar findings of OLDAA model can be tested and investigated in different countries and cultures to generalize and validate the scope of OLDAA model.

Also, the research methodology of this investigation has been purposefully designed to be as simple and focused as it could be. The data is transcribed and thematic analysis is applied manually. There can be possibilities of human error or research bias. The similar phenomenon can be studied and further verified using different research techniques and tools. Such as Nvivo, Delve or any specialized software can be used in future studies for the qualitative verification and precision of results of this analysis.

Lastly, as has been stated in the previous section 4.2, the final outcome of this research is modelled in the form of a pyramid to show progression of observed themes too. This progression of one theme to another is also a big concern of the study to be further explored in future researches. For instance, how affiliation turns into addiction is a massive concern that has been empirically observed at different levels. Hence, this progression must be given a due consideration by researchers.

6. CONCLUSION

As the research objective of this study had been to understand the experience of AI enabled platforms in Pakistan under the given perceived sacrifices of AI in BMW model. This research objective has been achieved through thematic analysis of data collected via interviews. The OLDAA model is the final outcome the thematic analysis of this interpretive study. The OLDAA stands for offering, lack of alternatives, dependency, affiliation and addiction. And OLDAA model is represented in the form of a pyramid to depict the progression of dimensions of the experience of AI.

7. REFERENCES

1. Ameen, N., Tarhini, A., Reppel, A., & Anand, A. (2021). Customer experiences in the age of artificial intelligence. *Computers in Human Behavior*, 114, 106548. <https://doi.org/10.1016/j.chb.2020.106548>
2. Amjad, M. H. (2023). Artificial Intelligence (AI) and policy in developing countries. Islamabad: Pakistan Institute of Development Economics. Retrieved from <https://pide.org.pk/research/>
3. Bibi, M. (2019). Execution of artificial intelligence approach in human resource management functions: Benefits and challenges in Pakistan. *Sarhad Journal of Management Sciences*, 5(1), 119-124.
4. Campolo, Alex. (2017). Madelyn Sanfilippo, Meredith Whittaker, Kate Crawford, and Andrew Selbst. AI Now 2017 Report. Retrieved from <https://ainowinstitute.org/reports.html>
5. Edu Rank. (2021, August 11). Best Artificial Intelligence (AI) universities in Pakistan. Retrieved from <https://edurank.org/cs/ai/pk/>
6. Elliott, R., Fischer, C. T., & Rennie, D. L. (1999). Evolving guidelines for publication of qualitative research studies in psychology and related fields. *British Journal of Clinical Psychology*, 38(3), 215-229. DOI: 10.1348/014466599162782
7. Ferrara, Emilio, Onur Varol, Layton Davis, Filippo Menczer, and Alessandro Flammini. (2016). The Rise of Social Bots. *Communications of the ACM*, 59(7), 96-104. <https://dl.acm.org/doi/pdf/10.11r/si18717?download=true>
8. Graefe, Andreas, Mario Haim, Bestian Haarmann, and Brosius Hens-Bernd. (2018). Readers' Perception of Computer-Generated News: Credibility, Expertise, and Readability. *Journalism*, 19(5), 595-610.
9. Green, Ben, & Salomé Viljoen. (2020). Algorithm Realism: Expanding the Boundaries of Algorithmic Thought. In *Proceedings of the 2020 Conference on Fairness, Accountability, and Transparency*, January 19-31.
10. Haider, A., & Hanif, M. N. (2009). Inflation forecasting in Pakistan using artificial neural networks. *Pakistan Economic and Social Review*, 47(1), 123-138.
11. Javed, Z. (2021). The role of artificial intelligence in the enhancement of cyber security of Pakistan. *Journal of Contemporary Studies*, 10(2), 1-14.
12. Kuziemski, M., & Misuraca, G. (2020). AI governance in the public sector: Three tales from the frontiers of automated decision-making in democratic settings. *Telecommunications Policy, Artificial Intelligence, Economy, and Society*, 44(6), 101976.
13. Marinchak, C. M. (2018). Artificial intelligence redefining marketing. *International Journal of E-Entrepreneurship and Innovation*, 8(2), July-December 2018.
14. Minister of E-Commerce. (2022). List of software technology parks. ETijarat Portal. Retrieved from <https://etijarat.gov.pk/information/software-technology-parks/list-of-software-technology-parks/>
15. Nadeem, M., et al. (2023). Barriers and strategies for digitalisation of economy in developing countries: Pakistan, a case in point. *Journal of the Knowledge Economy*.
16. Naumov, N. (2019). The impact of robots, artificial intelligence, and service automation on service quality in hospitality. In S. Ivanov & C. Webster (Eds.), *Robots, Artificial Intelligence and Service Automation in Travel, Tourism and Hospitality* (pp. 1-20). Emerald Publishing.
17. Oxford Insights. (2023). Government AI Readiness Index 2022. Retrieved from <https://www.unido.org/sites/default/files/files/>
18. PAF IAST. (2021). SPCAI: Sino-Pak Center for Artificial Intelligence. Retrieved from <https://paf-iaist.edu.pk/spcai/>
19. Peter, Jochen, and Rinaldo Kühne. (2018). The new Frontier in Communication Research: why we Should Study Social Robots. *Cogitatio – Media and Communication*, 6(3), 73-76.
20. Planning Commission Pakistan. (2014). Pakistan Vision 2025. Islamabad: Ministry of Planning Development and Reforms. Retrieved from <https://www.pc.gov.pk/uploads/>
21. Raine, Lee, and Janna Andersen. (2017). The Internet of Things Connectivity Binge: What Are the Implications? Retrieved from <https://www.pewinternet.org/2017/06/06/the-internet-of-things-connectivity-bing-e-what-are-the-implications/>.
22. Riedl, Mark. (2019). Human-centred Artificial Intelligence and Machine Learning. *Human Behaviour and Emerging Technologies*, 1, 33-36. doi:10.1002/hbe2.117
23. Rogers, Everett. (1986). *Communication Technology: The New Media in Society*. New York: The Free Press.

24. Shafiq, J., Shafiq, H. M. S., & Sarwar, M. S. (2022). Use of ICTs and artificial intelligence to overcome judicial trial delays in Pakistani courts. *Pakistan Languages and Humanities Review*, 6(2), 1153-1163.
25. Shah, S. A. A., et al. (2021). Information technology moderation in HR functions of public sector organisations in Pakistan. *International Journal of Technological Learning, Innovation, and Development*, 13(4), 370-387.
26. United Nations (UNCTAD). (2017). *Information Economy Report: Digitalization, Trade and Development*. Retrieved from https://unctad.org/en/PublicationsLibrary/ier2017_en.pdf
27. Xin, Y., et al. (2022). Assessing citizens' attitudes and intentions to adopt e-government services: A roadmap toward sustainable development. *Sustainability*, 14(22).
28. Xu, P., & Baigy, E. (2022). Innovation adoption case study and the potential of blockchain on trade single window: Identification of adoption challenges and suggestions for Pakistan single window [Master's thesis, Uppsala University]. ProQuest. Retrieved from <http://urn.kb.se/resolve?urn=urn:nbn:se:uu:diva-480244>
29. Zuiderwijk, C., & Salem. (2021). Implications of the use of artificial intelligence in public governance: A systematic literature review and a research agenda. *Government Information Quarterly* 38(2):101577. doi:10.1016/j.giq.2021.101577