WJARR

World Journal of Advanced Research and Reviews

(Review Article)

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Artificial intelligence marketing and customer satisfaction: An employee job security threat review

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Abstract

Artificial Intelligence (AI), is one of the key innovations created by Information System (IS) in the 21st century. The technology operates on an interconnected network which facilitates marketing decisions. AI role in marketing is quite enormous, as customers' needs and wants are efficiently met, with customers satisfied and employees sustainably engaged, towards future relationship with the firm. In-spite of its proficient value addition, there are outstanding issues which firms' employee are dissatisfied with the deployment of AIM, in organizational operations, these includes; the skill gap, resistance to change, and job security threat. The study examines various studies form (journals, books and e-repositories) on AI adoption, firms' operational activities, and perceived job threat by personnel, saddled with responsibilities of implementing AIM. studies selected was between 2012-2023, the theoretical framework attempts to fill existing gap in literature on customer satisfaction and job threat to personnel, due to AIM deployment. Qualitative research methodology was adopted using in in-depth interviews through focus groups (Management, employee, and AI Technicians), Systematic Literature Review (SLR) will also be adopted to analyze the variables of the construct. The study findings show that there is significant relationship between AI Marketing and customers satisfaction, based on effective engagement of firms' personnel saddled with the responsibility of deploying AIM in the organization. The implication of the study will be increase labor turnover, for employee without required AI set skills, and apprehension if customers are not satisfied. Future research should examine employee reaction in other functional areas of business, where AI id deployed.

Keywords: Artificial Intelligence Marketing; Employee Job Performance; Customer Satisfaction; Neural Network; Change Resistance Management; and Job Security Threat.

1. Introduction

The apparent acknowledgement of the applicability of Artificial Intelligence (AI) [Bhardwaj, 2018], in nearly all fields of human endeavors; workforce implications (Brynjolfsson & Mitchell, 2017), educational applications (Yuskovych-Zhukovska, et. al, 2022), in Virtual Learning Environment - VLE (Chen, Hsing-Chung; et. al, 2022; Horvat, et. al, 2015; & Weller, 2007), e-commerce applications (Chalmers, et. al, 2021; & Matz, et. al, 2017), and in governance (Buckley & Mozur, 2019; Congressional Research Service, 2019; & National Research Council, 1999). These developments have resulted in universal debatable issues (Bostrom, 2014; & Moreno, et. al, 2011), on whether the superior performance of AI is sustainable (Hendrycks, et. al, 2023), based on emerging risks (Russell & Norvig, 2009), trends (Bostrom, 2014; Dönertaş, et. al, 2019; Mohan & Tejaswi, 2020; & Rolf & Fumiya, 2004), AI identified threats (Mirbabaie, et. al, 2022), and on proven AI capabilities (Bostrom, 2002; Russell & Norvig,2009; Tariq, et. al. 2021; & Turchin & Denkenberger, 2018).

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AI is systematically programmed to emulate the human brain using neural networks (Anders, 2014; Ciresan, et. al, 2012; Park, et. al, 2021; Shriram, 2018; Yuskovych-Zhukovska, et. al, 2022), neural network is an interconnected computer program (Tedesco, 1992; & Whitby, 2003), modelled to achieve set objectives such as customers' needs and wants (Bart, et. al, 2002; & Tedesco, 1992), and respond in the 'trial and error' form of the human brain mechanism (Hinton, et. al, 2015; Hochreiter, & Schmidhuber, 1997; & Schmidhuber, 2015). Marketing strategist therefore, adapt neural network into existing social systems, to enable AI marketing achieve set marketing goals and objectives.

2. Analysis of recent research and publications

2.1. Artificial Intelligence Marketing

Artificial intelligence marketing (AIM) creates decisional output based on mined data to generate AI marketing processes (Verma, et. al, 2021), the neural network capabilities enhance AI to carryout various marketing functions, projections, forecasting and decision making (Kumar, et. al, 2019), using the human 'trial and error processes' (Hinton, et. al, 2015; Hochreiter, & Schmidhuber, 1997; & Schmidhuber, 2015). AIM capabilities handle individual customer needs and wants, while evaluating stock levels to ensure adequate product management, and firms' profitability instantaneously (Yau, et. al, 2021). Previous studies have anticipated futuristic changing landscape in marketing, based on AIM capabilities (Davenport, et. al, 2019; & Rust, 2020), also, another survey have revealed that most professional services forecast that, future business survival and competitiveness, will depend on firms' decision to adopt AI into its various functionalities (Professional Services Firms, 2021), however, most firms and industrial experts, are still skeptical about adapting AI into their businesses (Jarek, 2019). The skepticism is due to management unpreparedness towards managing anticipated outcome of AIM introduction such as; the cost involved in AIM acquisition/deployment, cost of training/retraining of employee, how to retain employee performance level after AIM introduction, and the management of employee resistance to change.

2.2. Customer Satisfaction

Customer satisfaction involves putting side-by-side, customers' experience prior to product/service consumption (expectation), and after experience (Eshiett, et. al, 2021: & Kotler & Amstrong, 2018). if the product/service experience is equal or exceeds expectation, the customer is satisfied (Farris, et. al, 2010; & Abdulla et al, 2014). The fundamental basis why businesses thrive, is based on its capability satisfy customers, when customers are satisfied, they become loyal to firms' brand, and such relationship could result in customer attrition, if customers are disconfirmation (Eshiett, et. al, 2022: & Peyton, et. al, 2003), Deepening of customer relationship by firm, enables firm to retain such customers for consistent repurchase of firms' brand (Godovykh; & Tasci, 2020)., Customers commitment is a key index to cementing Business to Customer (B2C) relationship (Eshiett, et. al, 2021: & Ogba & Tan, 2009); since the customers 'emotional factor' becomes the determining factor for future engagements with brand (Eshiett, et. al, 2022; & Van Doorn, et. al, 2009).

Customer satisfaction in an AI enabled systems adapt social networks in data mining; collation, analysis and interpretation (Wang, et. al, 2007), by applying neural marketing in forecasing and adequate projections through social marketing approaches (Tedesco, 1992; & Wang, et. al, 2007), and in new product developmental ideas that is customer oriented (Eshiett & Eshiett, 2022; & Eshiett, et. al, 2023). This approach could enhance market segmentation, for effective customer profiling and effective employee performance (Bloom, 2005; & Howard, 2019), also; for effective evaluation of employee turnover, inventory control, sales forecasting, demand management, and feedback process (Bart, et. al, 2002; & Hall, 2002). The synchronization of human and AI ecosystem, results in providing customers' needs and wants effectively (Adel, et. al, 2018). Where the changing paradigm is met with employee resistance and unwillingness to change, it could be difficult for management to achieve set organizational objectives.

3. Employee Job Threat Review

3.1. Employee Performance

Employee performance according to Campbell (1990), is a concept that connotes an individual employees' 'unique' capabilities that 'singles out' the person within an organization, nationally or internationally (Campbell, et. al, 1993; & Campbell, 1990). Several studies have evaluated key indices for engaging employees by firms to include; goal setting, motivation and acknowledgement of employee performance (Erez & Judge, 2001), evaluating perceived workers environment (Kacmar, et. al, 2009), evaluating the core dispositional causes of employee performance (Judge, et. al, 1997), and assessing the relationship between positive self-perception, and employee performance (Judge, et. al, 1998). The challenges of employee performance and job satisfaction in an automated system, can be addressed by management

through the process of training and retraining of employees to acquire specific skill/expertise, that could increase employee capacity, and enhance an 'easy fit' during the transitional process.

3.2. Organizational Change Management

It is a managerial concept that examines the entire organization and the required change. In any organization, change could be the outcome of; a review process, technological innovation, changes in customer choices/preferences, industrial competition, changes within the legal system. According to Kurt Lewin (1920), in the publication 'the three-step model of change which include; i) Unfreezing – which involves change that destabilizes individual/organizational equilibrium, resulting in a change process, ii) Changing this is when the actual process of change takes place, by collaborating, and implementing change -driven actions and iii) Refreezing this is the stage at which the individual/organization have imbibed the change, by implementing policy framework that could stabilize and propagate it within the industry (Burnes, 2020;2019 & Cameron & Green, 2020), shows how individual and organization are affected during any transitional process. Previous studies have shown that 'change', whether formal or informal, must be introduced by the organization to all stakeholders (Ginger, 2012), and in recent past, the COVID-19 pandemic which resulted in a global lockdown in 2020, was an 'eye opener' to all that change is inevitable, and we must accept it with all openness (Bennett, 2022). However, an AI driven change must be evaluated by organizations, within the Lewin framework as, an opportunity to accept the ongoing change, and implement effective framework that will accommodate all stakeholders effectively (Gandolfi & Thi, 2021).

3.3. Resistance to Change

The deployment of AI in the workplace was to reduce the impact of controllable issues that workers face, AI also have a high level of efficiency in performing task, compared to humans, since AI performance is not affected by stress, overwork, and risky/hazardous work environment, that could be inimical to human health. The deployment of AIM by firm is to aid in projections, forecasting and in marketing decision making (Kumar, et. al, 2019), using the human 'trial and error processes' of getting things done (Hinton, et. al, 2015; Hochreiter, & Schmidhuber, 1997; & Schmidhuber, 2015), and handling all aspects of customer needs and wants, while balancing stock levels to ensure adequate product management instantaneously (Yau, et. al, 2021). AI speedy encroachment into all aspect of human endeavour, has altered the pace at which technology has been known in the past, as a means of increasing employments. But this perception has changed based on empirical surveys; The controversy on whether adapting AI and Robots in the workplace increases unemployment in the long-run (McCorduck, 2004), the study acknowledges the possibility of a net-benefit, if productivity from AI deployment is effectively re-distributed (Ford & Colvin, 2016), and also the possibility of AI/Robots replacing human jobs in the workplace (McGaughey, 2018). The challenge at this point is; the global economic system that is faced with income distribution/re-distribution challenges (Eshiett, et. al, 2023), specifically in Low- and Medium-income countries (LMIC).

Other studies have subjectively evaluated that, about 47% of United states jobs ae classified as on a "high risk" of being overtaken by robots and AI (Frey & Osborne, 2017), while OECD reports classifies "high risk" jobs in the US as 9% (Arntz, et. al, 2016). There are fears and valid facts that 'AI automation could eliminate most middle class 'white collar' jobs (Arntz, et. al, 2016; & Frey & Osborne, 2017), same as steam power did to blue collar jobs during the industrial revolution (Lohr, 2017). The service sector is assumed to be most affected, since most of the jobs, could be effectively delivered if automated (Morgenstern, 2015). These empirical evidences have stimulated reactions from academia and industrial practitioners on how to balance the encroaching wave of AI, in relation to employee job loss threat. Some studies have suggested the need to evaluate the positive and negative impact of AI on job ecosystem (Yudkowsky, 2008), effective regulation of the activities of AI, to mitigate its effect on human jobs (Buiten, 2019), others have suggested the need for AI deploying firms to address its workforce on the attendant risk of deploying AI, and supposed ethics (Caitlin, et. al, 2022)

3.4. Technology Acceptance Model

The Technology Acceptance Model (TAM), is a model that adapts the behavioral content of an individual that has an intention to adopt a specific technological innovation; such paradigm shifts in technological innovations (Bagozzi, 2007; & Eshiett. et, al, 2022), technological developments, learning, usage and human relationship (Bagozzi, et. al, 1992), and comparison of user acceptance of computer, using dual theoretical basis (Davies, et. al, 1989). Other theoretical proposition on tech devices such as; Diffusion of Innovation – DIT (Rogers, 2003), and on why people use information technology (Legris, et. al, 2003). TAM has been criticised by other scholars based on; its triviality and non-existing parameter for practical valuation (Chuttur, 2009), on the illusionary nature of the theory, as lacking in metrics for measuring technological adoption (Moore & Benbasat, 1991), other scholars perceive that, if other parameters are overlooked, the ease of usefulness, and cost implication encourages users to adopt this theory (Lunceford, 2009). Based

on the foregoing, we integrated TAM into this framework, based on its critical assessment of human behavior towards accepting technological innovation, this process could avert resistance from organizational member, since employees' interest is coopted by management on every bit of change implemented by the organization. This shows an attempt by this study to fill the gap in literature, since it has not been examined by any other study.

4. Theoretical Framework

Figure 1 shows the proposed framework for Artificial Intelligence Marketing and Customer Satisfaction, through a neural network that addresses issues such as; i) Skill gap, ii) Resistance to Change, and iii) Job security threat, as a medium to enhance ease of AIM innovation diffusion within the framework of an organization/
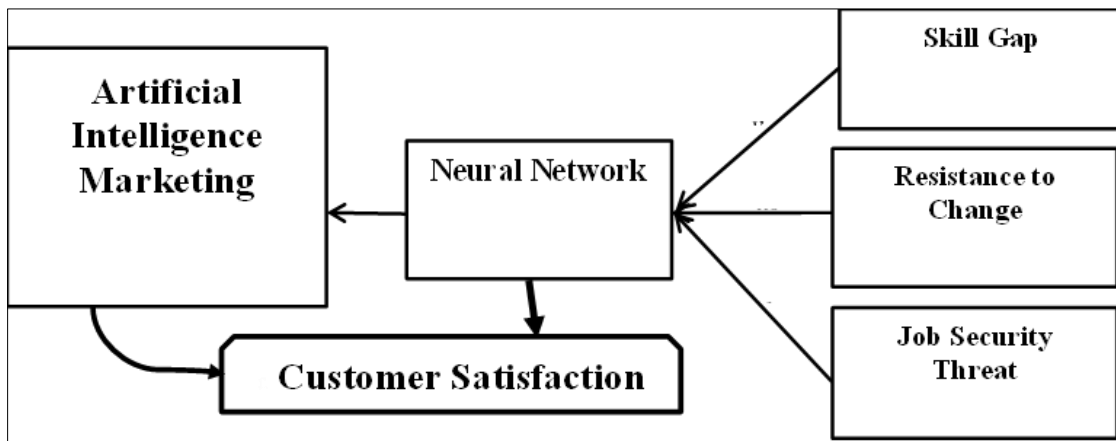

Figure 1 Theoretical Proposition for AIM & Customer Satisfaction

AIM uses mined data to generate its processes (Verma, et. al, 2021), through the sophisticated capabilities of neural network, by enabling existing social systems, to enhance AIM achieve set marketing goals and objectives. This process facilitates customer satisfaction through; data mining; collation, analysis and interpretation (Wang, et. al, 2007), by applying neural marketing, the process of forecasting and projections is enhanced (Eshiett & Eshiett, 2022; & Eshiett, et. al, 2023; Tedesco, 1992; & Wang, et. al, 2007). Based on anticipated challenges of employee resistant to change from traditional to an AIM process, we propose the following

4.1. Skill Gap

Avoiding resistance in the process of change will involve organizational management providing opportunity for employees to be trained/retrained, in order to fill the skill gap required to function in an AI enabled environment, Some of the measures to mitigate skill gap an AI driven workplace could include; training/retraining of employees to avoid; occupational burnouts, stress, depression (Brun & Milczarek,, 2007), employee openness to change (Anderson & Anderson, 2001) , readiness to operate within the framework of a new environment, driven by AI (Adel, et. al, 2018), synchronization of professionalism with work tool, to avoid dearth in professional skills (Howard, 2019), discriminatory 'hiring and firing; of employees should be avoided (Moore, 2017), enforcing workplace regulations and ethical standards, to avoid employees being made to work at automated pace (Moore, 2017), also, where faults, error or accident is as a result of insufficient training, employee should not be made to suffer (Adel, et. al, 2018), rather, appropriate risk management measures must be applied (frank, et. al, 2019). Hence, this study examines the significant effect skill gap customer satisfaction in AIM. In essence, the hypothetical proposition formulated from figure 1, to show the relationship between skill gap and customer satisfaction is thus;

Proposition 1; Artificial Intelligent Marking Skill gap have no significant effect on customer satisfaction.

4.2. Resistance to Change

The process of implementing a change within an organization could be meet with stiff resistance from the management (Skelsey, 2013), and employees (Hansen, 2012;). According to Hanen, change could be achieved by management through; i) setting achievable change-driven goals, ii) motivate employees, iii) appoint team leaders into the change driving team, iii) drive change through early adopters of innovation, iv remove all noticeable barriers to change, v) motivate employees to adapt change behaviors, vi) guide employees to desired change outcomes (Hansen, 2012), Hence,

averting any form of resistance to change by management and employees, management should adopt an all-inclusive measure in the workplace, that guarantees employee that, their interest is coopted within the framework of the change process, this will reduce the rate of employee and management resistance to an AI-driven change. This study therefore proposes a hypothetical relationship between resistance to change and customer satisfaction on Artificial Intelligence Marketing

Proposition 2; Resistant to change due to Artificial Intelligent Marketing have no significant effect on customer satisfaction.

4.3. Job Security Threat

The most critical aspect of implementing change within an organization is often 'fear of job loss' by employees. Several studies have evaluated key indices for redistribution The challenges of employee performance and job satisfaction in an automated system, can be addressed by management through the process of training and retraining of employees to acquire specific skill/expertise, that could increase employee capacity, and enhance an 'easy fit' during the transitional process from traditional marketing to AIM enabled environment. Hence, this examines the significant effect of job security threat on customer satisfaction. The hypothetical proposition shows the relationship between job security threat and customer satisfaction in an AIM environment thus;

Proposition 3; Job security threat resulting from Artificial Intelligent Marketing have no significant effect on customer satisfaction.

5. Research Methodology

This methodology adopted for this study is the structured systematic review (Fink, 2019, Thorpe et al., 2005), on AIM and customer satisfaction by integrating employee job security threat, to enhance the comprehensive review of previous studies (Bagozzi, 2007), to enhance its integration with the study. We adopted the exploratory research design, using in in-depth interviews through focus groups (Management, employee, and Customers), to examine how; skill gap , resistant to change, and job security threat; affect the AIM and Customer Satisfaction. Systematic The choice of exploratory technique was based on the ease in procedural analysis of the problem statement (Kothari, 2019). The Technology Acceptance Theory (TAM), was also examined as theoretical basis of the study. Data for the study was obtained through; Google scholar searches on; AIM, Customer satisfaction, and AI driven employee job threats.

6. Research Results

The results indicate that the role of AIM on customer satisfaction has resulted in consistent repurchases, based on the super performance of AIM. But there is a high level of anxiety amongst organizational employees where AIM is deployed, over anticipated possibility of job loss, if AIM is implemented. The outcome of the study shows that, training/retraining of employee to acquire AIM driven skill, in order to cover the skill gap, could mitigate threat of job loss anticipated by employees (Brun & Milczarek,, 2007), The result also show that, employee openness to change (Anderson & Anderson, 2001), could avert resistance of AIM implementation, The result also shows that, management .should guide employees to desired change outcomes (Hansen, 2012), and employee job threat could be handled through; engagement of employees through; goal setting, motivation and acknowledgement of employee performance (Erez & Judge, 2001), and evaluating workers environment (Kacmar, et. al, 2009), and assessing the relationship between positive self-perception, and employee performance (Judge, et. al, 1998). Hence, the management of firms where AIM is deployed should be preoccupied with, how the firm could retain/augment employee level of performance, within the framework of an AIM ecosystem.

Secondly, based on the objectives of the study, as highlighted in the hypothetical propositions, the discussion revealed that, skill gap has significant relationship with customer satisfaction on AIM implementation in the organization, the obtained result coincides with the work of ((Brun & Milczarek,, 2007; Eshiett, et. al, 2022), which posits that, if employee skill gap is covered, anticipation of threat of job loss by employees, will be mitigated. Also, the outcome of the study revealed employee resistant to change have significant interconnection with customer satisfaction on AIM implementation in the organization, this result contradicts the work of (Marquis & Tilcsik, 2013), which opined that organizational culture and employee routines are very difficult to change, hence, that radical changes such as AIM implementation could be very difficult to implement. Also, job security threat has significant interrelationship with customer satisfaction on AIM implementation in the organization. In essence, organizational customer have shown a high level of satisfaction due to their; repurchase, loyalty to brand, and Word-of -Mouth (WoM) advertising of firm brand, this proposition coincides with (Eshiett, 2021), which posits that satisfaction of customer whether online or

offline, could lead to customers becoming brand ambassadors. In essence, the augmentation of employee skill level, could assure staff of management determination towards guaranteeing their jobs and livelihoods, hence, employee resistance to change could be effectively mitigated.

Moreover, TAM shows trends that could affect AIM and customer satisfaction. The obtained result have opened a new dimension that, effective distribution/re-distribution of AIM income, could result in net-benefit, if productivity from AI deployment is effectively re-distributed to the society (Ford & Colvin, 2015). It has been established for the first time that, finding solution to national income distribution/re-distribution challenges, could increase the benefit of deploying AIM in the workplace. (Yudkowsky, 2008), based on previous results (Buiten, 2019), this study has shown that, effective regulation of the activities of AI, to mitigate its effect on human jobs could improve the regulation of AI ethics in the workplace Eshiett, et. al, 2022). The practical significance of this study is that, it suggests the need for AI deploying firms to address its workforce on; the attendant risk of deploying AI, supposed standards, and AI ethical requirement in the workplace (Caitlin, et. al, 2022). We also suggest the need to create, and enforce legislative reforms that will assist in regulating tech activities; such that, it is not inimical to organizational employees' health and safety.

Finally, the preponderance of issues generated around AI and other automated resource in the workplace, on negative impacts of AI on lives and livelihoods, have resulted in the creation of standardization Bureau (ITU-T) by the International Telecommunications Union – ITU, tagged 'AI for Good' (ITU, 2020), the aim of this bureau is to connect the entire AI stakeholders, to brainstorm on finding solutions to identified issues through research on solving global problems using AI, with the flagship Learn, Build and Connect - LBC) in line with the advancement of Sustainable Development Goals - SDG (Decan, 2017). The direct and interrelated SDGs that could be affected by the deployment of AIM include; SDG-1, No poverty, SDG-2; Zero Hunger, SDG-8; Decent Work and Economic Growth, SDG-9; Industry, Innovation and Infrastructure, SDG-12, Responsible Consumption and Production (UNSD, 2020). Hence, an effective combination of SDGs (1, 2, 8, 9, and 12) within the 'sophisticated capabilities' of data generated by the neural network system (Verma, et. al, 2021), could address the fears of employee job security threat within the work environment, and facilitate the use of AIM in implementing effective marketing decisions. This study is an attempt to fill sustainability gap generated by the deployment of AI within the AIM ecosystem.

7. Conclusion

Inconclusion, the deployment of AIM should be done by organization with keen interest on improving set skill of employees, For the purpose of easy transitioning from traditional marketing to automated channels. the study shows a significant relationship between AIM and customer satisfaction. Resistance to change could be done both at managerial levels, and employees, management should carefully; setting achievable change-driven goals, motivate employees, appoint team leaders into the change driving team, drive change through early adopters of innovation, remove all noticeable barriers to change, motivate employees to adapt change behaviors, and guide employees to desired change outcomes. Finally, employee will feel threatened if adequate transitional provisions are not made by management, one of such is that; employees should not be expected to work at automated pace, based on human physiological makeup, hence, management should show tangible proof, and conduct the transitional process effectively, to avert employee resistant to transition from traditional marketing to AIM. We acknowledge that, if these steps are taken by the management, employees could view the introduction of AIM in the workplace by firm as; effort by management toward augmenting the general level of performance, and a strategic step by firm to ensure its competitiveness within the industry.

Limitations and Future Research Directions

This study is a review of AIM and customer satisfaction, with adequate provision to mitigate on the feeling of threat to job loss by employees, the study is an appraisal of the transition from traditional marketing to automated marketing channels. The study is limited to the TAM theory, other theoretical basis could proffer a different result. The study advise that future research should be done in other functional areas of business where AI have also been introduced.

Compliance with ethical standards

Disclosure of conflict of interest

The authors specifically declare that there is no conflict of interest resulting from the conduct of this research.

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