



Study of Correlation Between Online Buyer's Digital Quotient and Key Factors Influencing E-commerce

Rahul Shandilya¹, Neeti Mathur² and Sushil Kalyani³

¹Research Scholar NIIT University

²Asst. Professor, Management, NIIT University

³Area Director, Management, NIIT University

E-mail address: rahul.shandilya@st.niituniversity.in, neetim.fac@st.niituniversity.in, sushilk.fac@st.niituniversity.in

Received 15 Aug. 2021, Revised 18 Apr. 2022, Accepted 18 Jun. 2022, Published 1 Jul. 2022

Abstract: E-commerce is a key pillar for the digitalization of socio-economic ecosystem. Online buyers cut across geographies, demographics and markets. The brisk growth of eCommerce has witnessed disproportionate investments in user adoption models by leveraging TAM, online platform features and promotional offerings. However, the influence of end buyer's personality traits towards eCommerce is limited to Big 5 personality traits which falls short as it refers to generations prior to digital age. Earlier research by author had conceptualized a framework termed "UCCCEEE" which signify seven personality traits manifesting digital quotient (DQ) measure of an individual. This paper builds further by researching specifics of its impact on online buying behavior by administering a psychometric test of Cronbach alpha of 0.7962 while also seeking information on their recent eCommerce experiences over key 10 factors seen critical in the literature surveys. The analysis used Pearson's coefficient (r) between findings of these test / surveys and observes that traits of efficient, updated, epicurean, connected and experimentative (in same sequence) display high "r" between DQ and online purchasing. The combination of various traits has significant moderating influence. The findings may help marketers build communication towards higher conversion ratios.

Keywords: Digital Quotient, E-commerce, Online Purchase, Online Behavior

1. INTRODUCTION

The fast-evolving digital divide among the societies is reflecting upon the buying behaviors of the end consumers. One such manifestation is in form of preferred and active utilization of the digital platforms. The Digital Quotient (DQ) is summarized as metrics of response mechanism of an individual towards a stimulus sent over a digital medium. [89] E-commerce refers to a commercial transaction made by an individual and which is enabled through a digital medium like online sales platform. Sometime it is also called as S-commerce or M-commerce depending upon specificities of the origin of the buyers (let's say social media) or computing device (let's say mobile handsets) used to transact on these platforms.

The online commerce has picked up excellent traction over last decade. Some estimates available on <https://wpforms.com/ecommerce-statistics/>; project it to cross \$ 4.5 trillion by end of 2021. 61% of the buyers have made at least one purchase using an online platform. It also states, that an average of 59% of the millennial generation users would visit Amazon.com to do the browsing and eventually purchase the products online. Globally the tradi-

tional financial services products like credits cards are the best used method (53%) for making payments over online purchases, followed by fintech enabled digital payment platforms (43%) and thereafter by debits cards (38%). 69% of the B2B product and services companies look forward to not print any physical copies of their marketing or after sales services catalogue by the end of year 2025 [88].

KPMG, a leading consulting and advisory firm has observed that one key driver which act as a catalyst towards the online purchase is that it is time agnostic. This is possible because of its 24x7 availability as online shops which further gets facilitated via the self-service features over the digital platforms like AI based chat engines, Interactive Voice Interfaces and Computer Assisted services. Email marketing has been most adopted method till date by the online marketers. This is because it helps to segment the target market into micro market. Majority of customers (61%) have recommended that they would prefer an email-based reach out to them for any promotional material while it was observed that on an average 41% of the emails have an open rate by the recipient [88].



Social media has made a significant impact on the buying behaviors of the end customers and users. The buyers (74%) are observed to refer to comments posted on the social media handles covering the shared experiences of other users before making the final commitment to make any purchase. The social commerce as is called (sCommerce) is one of the subsets of e-commerce as it represents a specific pattern generated out of a social medium platform towards the content, unstructured datasets, influencers, search engines outcomes eventually culminating into specifics of online purchases. Online commerce platforms which present a close connection with social media platforms/handles are known to generate 32% more traffic attraction to their websites. The Facebook and Instagram are industry leaders when it comes to advertisement expenditure made by the sellers solely because it generates more qualified and matured leads compared to any other social media platforms. The online platform "Shopify.com" shared that the consumer traffic received from the online advertisement made on the Instagram eventually generates highest per visit order size of \$ 65 whereas other similar platforms like Facebook, Twitter and YouTube respectively follow with order size of \$ 55, \$ 46 and \$ 38 [88].

Mobile communication devices have further accelerated the advent and adoption of online purchases, owing the convenience factor it brings in with respect to the geo-local usage. Statistica.com estimates that 93% of millennial generation buyers who make a transaction online have used mobile communication devices at least once to conduct a quick reference check. KPMG observed that 65% of the buyers who visit any convenience stores physically do a refer check on their mobile devices-based for the information needed towards the purchase price and 32% of these online buyers often change their mind to decide otherwise and do not proceed further based upon the data/information/feedback they gather after browsing the internet over their mobile devices. A qualified mobile app which is installed by a consumer on its mobile phone may provide a 3x times higher lead conversion ratio compared to the mobile browser-based website access given the reason that downloading an app creates a certain level of belief in the source itself [88].

However, it is also observed that the lead conversion ratio between a customer visiting and navigating an online platform and eventually making a purchase is around 2.86%. Thus, despite a huge traction among the buyers towards the e-commerce, the actual efficiency of the online purchasing platforms is still far from being desired and compared with what a physical mode has experienced; 6-7% and even going up to 11% at times in some industry. The bounce rate on mobile devices increases if the page takes more than 3 seconds to show up after the click or if the information is designed to come up leveraging 3 clicks or more. A poor ergonomic UX/UI design of site or app on a mobile communication device can irritate a buyer which has been case of early exit (bounce rate) by

62% of the customers who chose not to buy any further over mobile phone even after initializing the transaction. According to the Baymard Institute, if you force a visitor to compulsory create an account by asking for personal data, it created a negative bias on the mind of the visitor and the purchasing process, as eventually 23% of these visitors don't proceed any further. OptimMonster.com states that the products category which have seen a highest bounce rate are clothing (40%), followed by Technological products (18%) and home care products (16%). ECommerce sites can gain through a 35% reduction in the bounce rate if they provide for a better UI/UX to keep these users engaged.

Thus, while online commerce holds a big promise towards the future, there are reasonable gaps in the whole e-commerce ecosystem which has infused big inefficiencies in the lead conversion ratios. A large part of these identified gap belongs to the user ergonomics and engagement designs and factoring the same in seller's online business models, processes and associated online platform. While web and e-commerce technology has been an area well researched over last two decades, which has helped in improving the design of the online platforms with respect to ergonomics of purchase process and user experiences, the research on end user personality traits and their e-commerce adoption model is still an area which probably relies on the TAM (Technology Adoption Model) as proposed by Davis in 1989 which still is a far dated model of relevance for the digital age users.

The author below has researched this area over last 4 years and has proposed a framework termed as UCC-CEEE which signifies seven personality traits which have highest influence on response of an individual against the stimulus received thru a digital platform. The author has also reflected upon leveraging this framework to define the digital quotient of an individual. The study that follows here is built around the UCCCEEE frame work proposed by the author and ascertaining which personality traits has significant influence on the online purchasing behavior of a buyer.

The outcome of this research work has a potential to help technology platform designers, sellers, process managers and product managers in defining their engagement of online buyers better.

2. LITERATURE REVIEW

A rigorous study and review of previously published literature was conducted covering the end buyers or user's attitudes, traits and behavioral aspects around the purchase of products and services made over an online medium. The various media categories evaluated covered the e-commerce (electronic media), sCommerce (social media) and mCommerce (mobile devices enabled). Additionally, study and research work done in space of effective leverage and utilization of various technologies and working models proposed were also studied in depth. These models proposed by accomplished researchers and



journals included TAM (Technology Adoption Model), Theory of Reasoned Action (TRA), UCCCEEE Framework for Digital Quotient and the Big 5 (OCEAN) personality traits, the basic concepts of Design Thinking were also studied with respect to its association with the Emerging Digital Technologies as and when they are leveraged by the digital platforms. The effectiveness and experience in the online buying and payment models and technologies eventually boost buyers' motivation to buy will demonstrate the transactional success [103]. Age, education, income, and digital skills are the main factors for adoption [104].

Factors associated with Attitudes and Behavior observed during the Online Buying

Li, N., and Zhang, P. studied and analyzed the shopping attitudes and behavior of customers buying online through 35 empirical articles selected from several Information Systems (IS) journals and IS conference proceedings. It was observed that ten interrelated factors had demonstrated significant correlation in the space of ecommerce. These ten factors are external ecosystem environment, social demographics, individual personality characteristics, Product or Services features characteristics, user's attitude towards eCommerce, a buyer's conviction or intention to transact online, decision making process over internet transactions, online buying and consumer satisfaction. The five factors out of the above (external ecosystem environment, social demographics, individual's personality characteristics, product and services characteristics and website quality) were found to be behave as ordinarily independent factors whereas five (user's attitude toward eCommerce, buyer's intention or conviction to shop online, decision making over internet transactions, online buying, and consumer satisfaction) were observed to be ordinarily dependent variables [79]. Internet buyer's perceived reputation of a third-party seller has a positive correlation on their attitude toward the seller & the associated intermediary. Further a positive COO generates a higher influence on buyer's attitudes and intentions.[107]

Theory of planned behaviors, Big 5 Traits and Mowen's 3M model for consumer behavior

The theory of planned behaviors (TPB) and its close association found with the Mowen's 3M Model of consumer buying behavior was also analyzed during the literature review. An individual's culture upbringing and its prior experience of using a digital platform also plays a key role in the end buyer's approach and attitudes about electronic commerce [6]. The perceived trust has a positive correlation with the key variables linked with technology adoption in the TPB framework. [14] Surface trait – impulsiveness has a positive correlation with three traits – the situational trait – internet addiction, elemental trait - need for arousal and elemental trait - material resources. There is a negative correlation observed with the compound trait - task orientation. Elemental trait -

emotional instability was known to display a positive correlation with the Internet addiction. Elemental trait - conscientiousness displayed a positive correlation with task orientation. [22] Impulsiveness in lighter mode observed in the buying behavior reflects upon an individual's conscientiousness and often seen as an active trait. Impulsiveness in medium mode displayed in the buying behavior reflects upon three traits of Ocean theory - agreeableness, extraversion and openness as compulsory conditions while the fourth trait conscientiousness was observed as complementary necessary condition. The fifth trait - Neuroticism was seen as complemented by other personality traits. [23] Environmental characteristics applied for retail buying covering three aspects - ambient, design, and social together with a user's hedonistic trait were seen to have a positive correlation with the emotional responsiveness. The hedonic motivation had a moderating impact on the impulsive online buying behavior. [24] The criteria considered by end consumer's during the decision making related to online purchasing were seen as – product price, stock availability, social feedback, shortages, product details, terms and conditions and social media intense activities. The price point variation explained the most variation in the end user's online buying behavior. [31] Social demography factors like (age, marital status, income, location, per capita and occupation), historical pattern of buying (good types, e-commerce experience sharing and time spent browsing the internet) and user's perceptions (product and service and associated risks) clearly impacts the consumer's attitude and approach towards online shopping. The online buying experience, product and services perception which a customer carries has an impactful influence on the online shopping. Some demographic factors like the age group and occupation do not have any differentiating impact on the attitude towards online buying however when it comes to income group the influence can become quite significant [32] The factors like web site UI/UX design, the reliability, fast responsiveness, and deep trust affects the overall service quality and end user's customer satisfaction. It may have a positively correlation with the customer purchase intentions. [37] The risk perceived by a user and the price point have a positive influence on the online buying behavior. The end user's positive attitude, risk associated with product features and the financial risk have a negative correlation with the online buying behavior. [50] The key factors which have a significant effect on the online purchase behavior are Product's Information, Quality Management, Order Fulfilment, brand reliability, customer Service, website UI/UX design, quick availability of the details and Privacy/Security. The product information and its quality, quick turnaround and details, and end user's privacy and security have a positive affect towards the online purchase behavior. [57] The theory of Planned Behavior (TPB) justified that user's attitude, subjective norm and perceived behavioral control play an important role in ascertaining the acceptance, adoption and usage of digital technologies, however, they fall short of explaining a



user's continued intention towards the online shopping [74].

Personalization

The personalization of an online purchase platform does not significantly relate to the perceived service quality and end user's customer satisfaction. [37].

Technology Acceptance Model (TAM) and Theory of Reasoned Action (TRA)

Some of the adoption factors like system integration, web UI/UX functionalities, web expenditure are good predictors as well as differentiators for online buying. The perceived usefulness (PU) and Perceived ease of use (PEOU) are major influencers on an online purchase preference and e-commerce adoption. [1]. Both factors like perceived organizational e-readiness (POER) seen together with the perceived environmental e-readiness (PEER) display deep influence on the e-commerce adoption. The factors like innovation, management, organizational culture, and ecosystem bring moderate influence whereas the POER & status of an organization governance brings good influence over the adoption of eCommerce as compared to the PEER [2]. The end consumer generally manifests its degree of adoption of e-commerce by its stated intention to transact on-line. The factors like perceived usefulness (PU) and perceived ease of use (PEOU) have actively driven the e-commerce adoption – while the factors like trust and perceived risk display the uncertainty associated with the e-commerce environment. [3] The DeLone & McLean ISS Model proposed that quality of information, website features and offerings along with the services brings differentiation to how online buying is perceived beneficial by the end buyer [4] Personalized recommender system (filter algorithm) generates a way to push suitable items to users according to their purchase records, reviews, and ratings, thereby reducing their access time to such items [108].

Perceived Ease of Use (PEU)

End consumers and buyers consider the factor of geolocation convenience, time saving and 24/7 openness of the shopping hours as most important drivers for the online buying. [7] Limitations of the internet access, computer usage experience & skills, restrictions on personalization, hedonic enjoyment during the buying process, absence of aftersales support services were analyzed as some key challenges existing in the eCommerce markets [9]. Online shopping experiences of end users and product features information as provided online makes a direct influence on the adoption of retail e-commerce [10]. Online customers who are looking for services offerings are influenced by the perceived ease of use [13]. Online platform design features like time taken to download some data, user navigation experiences, cyber security conditions add to the other factors like end user's comfort on technical skills, time

availability and financial resources [14]. Key deterrent to adoption of any online purchasing platform is the poor or complete absence of after-sale support [15]. The cascading impact of perceived usefulness (PU) on the repurchasing by an end user's intention was found as negligible [16]. Visible cost parameters actively relate to the adoption of online buying by retail user through the electronic word of mouth (eWOM) & various customers reviews over social platforms or online websites (ECommerce-eWOM) & (social media-eWOM). The ECommerce-eWOM's use and genuineness has a positive influence on the adoption of ECommerce-eWOM, but may have an element of not so active influence on that of social media-eWOM [17]. In a developing economies the key impact factors on the adoption of online buying are awareness and delivery services, government digital push, change management, transactions availability, trial and return of goods experience. [19] The Impulsive buying on the eCommerce, when supported by availability of goods return is a key factor which can promote the online buying behaviors and therefore early adoption of online buying [21]. The quality of information availability, UI/UX quality and cyber security belief affect the consumer satisfaction and are significantly related to the online purchase behavior. [34] The retail consumers perception of the eCommerce ecosystem with respect to their sense-making and navigation potential across relevant web pages makes an important factor. [39] Among other aspects the key influencers for the eCommerce are the retail user convenience which is supported by the perception of the product quality that a customer is willing to buy online. [45] The availability of the relevant content and websites ease of use are major actors which attract the user traffic while with respect to the platform usability, user's identity, time to download, perceived trust assurance, made for digital medium, platform responsiveness and handling of user's emotion can all be major differentiators in concluding sales on the online platforms. [47] The online shopping orientation, subjectivity in the norms and quality of information shared on the website had a positive correlation on perceived usage (PU), the frequency of the purchases and quality of the web systems influence the perceived ease of usage (PEOU) of the online platforms. The correlation between visibility and perceived usage was found to be non-significant [53].

The end user's Ease of use (EOU) and the perceived cost (PC) of the products as available on the platforms were found to be the key factors affecting the actual use (AU) of eCommerce. The perceived cost (PC) was found to have no significant influence on the purchase intention (PI). The other factors like the end user's perceived risk (PR) did show correlation with the user's purchase intention (PI). The other factors included the product/service availability, geolocation convenience, personality profiling, social demographic and geographic factors displayed influence over eCommerce behavior [54].

End user purchase convenience is a function equation



which has four clear dimensions—website access, search engine, online ease of transaction, and delivery of the goods or services. eCommerce shoppers have generally demand higher perceptions of website access and convenience, search engine convenience, and transaction enabling convenience compared to the in-store buyers. [58] The perceived ease of use (PEOU), the perceived usefulness (PU), end user's attitude, believability, user's intentions, and actual user behavior are seen to have noteworthy and positive correlation while user's experience during visit to online platform was seen to have a moderate impact [73].

Website usability is a metrics of ease and simplicity of the interface for utilization, since if customers are not able to get products, they can't buy them leading to loss of gross revenue. [92]. Websites should provide detailed but easy-to-read usage guidelines on the payment pages to facilitate the operations of the payment procedures [93].

Perceived benefits

The attraction of the cost saving is a motivation for end user to come back to the online platform. [7] The user's adoption of online buying is closely linked to rational thinking and purchasing behavior of the retail customer. It makes them believe in the creation of a net value using the online platforms which brings them again to the higher adoption. The identification of the net value is considered based upon the perceived benefits and user's efforts which is taken to neutralize the barriers in the user's way. The higher the above said net value, the better are the chances of the adoption of eCommerce. [9] The quality of the offerings and features as provided on the eCommerce platform generally has an active influence on the adoption of online buying. [10]. The end user's product perception makes a positive and direct influence on the adoption of the e-commerce. [10]. The detailed and relevant information related to online Product offerings including the features and characteristics (let us say product diagnosticity and associated product value) adds to the prediction of the adoption of eCommerce. [14] The biggest barrier between the adoption of e-commerce conducive behavior across the geography is the high international shipping charges. [15]. In a developing economy the key factors making a far-reaching influence on the adoption of online buying are the total cost of process, physicality involved in the process, after sales and services warranty. [19] In a developing nation the consumers prefer to shop online so as to save time while working upon the options available online with respect to varieties. [27] The quality of service, perceived trust and value were seen to have significantly and positively correlated to the user's behavior and intention. The quality of the E-service is mostly influence in building end user's behavior and the intention. [38] The time taken by user on the websites, the scale of discounting in the prices and end user's comfort during buying attracts the customers towards online buying

against the offline buying. [51]

The quality of the E-service coupled with end customer's perceived value make a high influence towards the customer satisfaction which further makes a significant influence on the loyalty displayed by the end users. The customers who carry a high perceived value generally develop a stronger correlation between the buying satisfaction and loyalty compared to other customers who had shown a low perceived value. [59] The product price listing as available on the eCommerce portals have shown major and quick impact on purchases made online. The sellers on the eCommerce platform need to share more competitive price listings across a variety of product options so as to attract retail users so as to encourage them to conduct online purchases. [64] The utilitarian orientation of the mind of a buyer, user's convenience, clarity and discounting on price, and a wider option range to select from has shown to influence retail buyer's intent towards online shopping. [66]

The total cost of operating (TCO) an online shopping consists of three salient categories levels, namely at consumer, online product and at online channel. The behavior of end user towards online buying and customer loyalty are generally considered to be directly influenced by the consumer TCO. While various TCO have shown both - a direct and negative influence on customer loyalty, a lot of this would depend upon their impact to reduce customer satisfaction. A lower TCO during any online purchasing transaction may generate higher customer loyalties which is influenced by the mediating influence of customer satisfaction. The retail consumer's inherent personality attributes coupled with consumer's risk-taking appetite reflects on what effects the TCOs can have on the customer loyalty. The perceived enjoyment by an end user over the online purchasing influences the influence of TCOs on online buying behavior. The different product and services categories influence the TCOs as well as mediate the various antecedents on TCOs. The various product and services categories further influence the correlation between TCOs and the associated online behaviors. [69]

Both the value generated and three TCO factors have deeper influence on the loyalty and repurchase intentions of the online buyers. The TCO may consist of additional three components as well (i.e., information searching engine cost, morality induced cost, and any asset which need to be invested by a user to conduct the transaction). The retail consumers' perceived value creation and aggregation of various cost components may have a positive correlation related to any repurchase intention borne with or without any loyalties. The information search engine costs draw upon the most important impact on the repurchase intentions. The purpose of any search engine is to provide competent and sufficient cues so that TCO related to consumers information searching is reduced and which becomes the core driver for the repurchase intention [86].



Customer like surprises and using same element the gambled price discount (GPD), a price promotion that leveraging discount uncertainty helps in consumer engagement. The perceived attractiveness of GPD adds to the enjoyment of a subscription package especially for the replenishment sales [102].

Perceived Risks

There is an absence of a comprehensive model which can engage all the usability components simultaneously with the cyber security aspects. An evaluation model which shall evaluate usability and security together for e-commerce platform shall help improve the users confidence on the e-commerce.[97]

Prior good or bad experience doesn't really make a significant influence in the areas concerning user's privacy & controlled website access. [6]. The associated security risks and perceived trust deficit on sellers are considered to be key barriers which are prevalent in the online buying space [9]. Risk perceived by an end user has direct & positive correlation on the user's adoption of B2C e-commerce [10]. The online buying reflects an assimilation of many factors like anonymity, lack of governance or efficacy of user's control, opportunism, uncertainty-thus the adoption of online buying is greatly influenced by attributes like cyber security, end user privacy and perceived risk by retail users who carry a sensitivity towards their personal information & the belief they invest in the web platform. [11]. Customers who buy products online are greatly influenced by scale of the perception of risk.[13]. Key deterrent towards the adoption of e-commerce is the fear of non-delivery of the product bought online. [15]. The customer's perceived risk and lack of trust, perceived standards of the quality, the social reputation of the website & ability to evaluate the features of the product are critical aspects which impact the consumer's conviction to repurchase online. [16]. The big influencer in a developing economy towards the adoption of online buying are cyber security, cyber fraud and unwarranted hacking of user data, trust deficit, the local cyber-laws. [19] Key attributes that influence eCommerce purchase process have two key and differentiated end user perspectives: a technology-oriented and a perceived trust-oriented. The 'perceived risk' associates with trust deficit factor and the 'perceived ease-of-use' associates with the technology adoption factor and both these factors directly impacted the end user's attitude towards eCommerce. [33]

The factor of Perceived - Usefulness / Security / Privacy / Good Reputation associate with the end user's expectation to see the online platforms customized are the key antecedents to build the initial trust on any online transaction. The initial trust and end user's familiarity with eCommerce has a positive correlation on the end user's online purchase intention. [41] The end consumer approach towards the online buying has positive correlation with enhanced trust and anticipation of the perceived benefits. Initial trust is a

function of the end user's perceived website quality and the eWOM (generally on social media) which itself is a sub-function of perceived website quality. Therefore, the initial trust on online platform and end user's perceived benefits are key predictors of buyer's attitudes and approach toward eCommerce.

The end user's perceived website quality was found to be in a direct correlation of initial trust, and which eventually positively and mostly carries an influence on the perceived benefits. The researchers found that 28 percent of the variation in attitudes towards the eCommerce was caused by two factors of the end user's - the perceived benefits and initial trust. [44] The consumer initial trust in online transactions is greatly impacted by perceived information and cyber security which may or may not be aligned to the genuine and objective assessment of shortcomings of the cyber security.

Confidentiality providing end user privacy, necessitates zero leakage of information from client devices or the server. To make the e-commerce transaction secure the data usage has to be free from modification, destruction and repetition. Therefore, the e-commerce system should provide security to the information during transmission by encryption and message digesting [94].

Various cyber security mechanisms like data encryption, web protection, user access authentication, and transaction authorization verification act as a catalyst to the end user's perceived comfort about the information security. These various mechanisms are operated leveraging the technological solutions to avoid any cyber security threats openly visible to end users and hence have correlation with the actual consumer perceptions towards the eCommerce. [61] The perceived initial trust of the online store is more influential in attracting as well as retaining the heavy and active / repeat shoppers and help in building the assets specificity which eventually helps in building the customer loyalty. [63] The end user's previous experiences of conducting an online shopping significantly / positively impacts the perception of suitability and quality of the products, the financial credibility, and risk to personal information which are associated with eCommerce. [65]

The retail consumers often consider that e-services are somewhat artificial and unauthentic, and that accentuates the retail buyers to conduct a self-evaluation on whether the online offerings of services are a viable and suitable alternative to the physical methods of receiving the services or the products. The end consumer's perceptions of artificiality (PA) which has positive correlation with perceptions of cyber risk, has been seen to deflect the consumer acceptance of eCommerce as real deal. The end consumers who were found good at digital technologies or working in that profession had lower overall artificiality perceptions. [68]

The retail consumer's comfort towards online



purchasing has shown good use of technologies eventually help build the initial trust which creates an enhanced perception of safety and usefulness and thus influencing the adoption of eCommerce. [72]

Hedonic & Utilitarian behavior and PEU and PR

Among the personality traits, the hedonism may closely predict the buying propensity of the initial exploratory product / services related information seeking retail consumers which eventually culminates into the impulse buying. It was also observed that hedonistic traits activate the online shopping motivation and significantly increases the browsing time which has a positive correlation with online buying frequency. The end user's perceived credibility of the information related to the product features and pre-purchase online communication correlate and eventually display a positive high-high correlation with online buying frequency. [30]

The hedonic and utilitarian attitude displays a positive influence on the search engine usage and eventual purchase intentions subject to the moderating influence of the perceived ease of use (PEOU) and perceived risk (PR). Although the hedonic motivation has a positive correlation with the usage of search functionality, the utilitarian motivation does not have any positive correlation with the search intentions. The perceived ease of use (PEOU) acts as a moderator over the correlation between hedonic motivation and search intention. However, the same PEOU doesn't have any moderation effect on correlation between utilitarian motivation and search intention. The end user's perceived risk on online purchase has a moderating influence on the correlation between hedonic motivation and purchase intention. [71]

Unified theory of acceptance and use of technology (UTAUT)

The unified theory of acceptance and use of technology (UTAUT) using three crucial factors for an end customer - hedonic & utilitarian motivation, perceived price value, and habitual inclination display significant impact on the eCommerce behavior. The personality related demographic divide - example the age, gender and skills & experience - generally have a moderating influence on these factors which further have a correlation with the end user's behavioral intention and technology adoption [83].

Social commerce & Influence of the Customer Reviews towards online buying

Social networking sites (SNS) have created new business models for organizations. These entities have been leveraging these social media platforms and associated technological ecosystem to facilitate B2C online buying and selling processes. [5] The user's reviews about a product or services provide a qualified supplement to the other

information provided by online stores / websites such as product features and descriptions, professional reviews from industry experts, and / or any personalized advice provided by artificial intelligence based supporting systems. The existing customer's commentary / review with qualified extremity, good depth, and coverage of the product and services type brings a deeper effect on the end user's perceived helpfulness of the review. The search goods & services display close correlation with the extreme reviews shared by erstwhile customer while for experience goods & services, the extreme ratings are less leveraged by the customers compared to those reviews which have moderate ratings. In the category of the goods the review depth displays a positive correlation with the perceived helpfulness of the review, but the product type provides a moderating influence on this correlation with the helpfulness of the review. The review depth by an existing user also has a greater positive correlation on the helpfulness for search goods rather than for experience goods. [35] The factors like technologies, social media communities and associated analysis and information / knowledge management makes a big influence on the decision making of the end users on the eCommerce platforms. The interdependencies between these factors demonstrated that the social networks-based analysis is actively used by end consumers as a technical support system in the decision-making phases. The other clusters act as peripheral modules providing the needed intelligence to the decision process. [42] The SNSs enables the promoters / sellers / advertisers to push brand awareness and mindfulness furthering the item consciousness. This serves as a ready and referenceable platform helping to connect and communicate with larger audience. A strong, deeper and positive correlation exists between the attributes of UGC (User Generated Content) and retail user's attitude and purchasing behavior. [43] Social networks often make a big impact on end customer's impulsive online buying. Marketing and brand managers need to carefully shortlist relevant social networks to encourage end user's impulse buying. The Facebook and Instagram being the most influential; Twitter has the least impact. [56]

Active participation of existing users and response of others members on chat board or within the review section for the product or services have positive correlation with the quality of word of mouth (WOM) -which has further positive correlation with the online trust, which further propagates this correlation with the factors like perceived usefulness, online shopping intention and perceived ease of use (PEOU). The results drawn upon also demonstrated that perceived ease of use (PEOU) and perceived usefulness (PU) have positive correlation on shopping intention [76]. In social e-commerce networks, the community level popularity of a listed product is the implicit social information which stays dynamic and can have string influence on the preferences of a user [110].

Mobile Commerce / Mobile Banking Acceptance Model



Enhanced and further enabled interpersonal sharing and communication and geo-locational flexibility appear to be the basic factors differentiating between website-based buying compared to mobile commerce. However, there could be hinderances like limitations of reach, spread and penetration of the mobile networks, high total cost of operations (TCO) and quality of in hand mobile devices often constitute significant enablers or barriers towards adoption of the mobile commerce. [20]

An exploratory and comparative study was made towards the wide acceptance of mobile commerce using systematic literature review of 80 primary studies and it was observed that a causal relation model can behave very differently. Beside the theory of TAM/TAM2, the hedonism-based end user attitude for enjoyment often plays a significant role in mobile commerce acceptance. [81]

The amalgamation of the various models like technology acceptance model (TAM), theory of planned behavior (TPB) and Luarn & Lin's 2005 mobile banking acceptance model (MBAM) articulated and validated an integrated model for predicting retail user's online buying intention leveraging mobile commerce by considering at least one perceived trust-related factor ('perceived credibility') and two resource-related factors ('self-efficacy' and 'perceived financial resources') [84]

Innovation diffusion theory (IDT)

The technology acceptance model (TAM) and its conjoint analysis of its integration with the innovation diffusion theory (IDT), End User's Perceived Risk and Total Cost of Operations (TCO) closely determines the end user's mobile commerce (MC) adoption. The study also concluded that all variables excluding the end user's perceived ease of use (PEOU) closely had influence on the users' online purchasing behavior and intent to buy. Among many factors, the compatibility showed maximum correlation. The negative correlation of end user's perceived risk on the online buying behavioral intention was seen as a significant aspect for the user's adoption of the online buying. [85]

Gender and its correlation with online buying

The factor of gender was seen to have a neutral correlation with the attitudes influencing the adoption of the e-commerce. [6] It was observed that gender has a moderate influence on the end user's beliefs which were seen to be having a close association with the B2C e-commerce. The male consumers are driven by the relative value, benefits and advantage whereas the compatibility is considered more relevant and useful by female buyers. [8] Among the generation of millennial buyers, the gender difference was noted to showing slightly biases with male students displaying more positive attitude toward online shopping. [29] However gender doesn't bring any differentiation be-

tween the online shopping and internet usage, and it was concluded that gender though relevant is not alone is not sufficient enough to explain the differences. [60] The two key factors of initial trust - website integrity and end user's openness and benevolence (intention/willingness) displayed an equal correlation for both genders towards the online purchase intention [77].

The men and women do not significantly express their differences in the assessment of the e-commerce websites. On the other front when assessed at sub conscious level the neural results state that there are gender-related differences in the perception of online buying, which highlights the difference during the gender-specific purchases. Men invigorate greater neural activity as the visually aesthetic lead to significant neural activation left brain hemisphere for men in comparison to men, whereas websites evaluated as less visually aesthetic depicted neural activation in brain regions of the right hemisphere in male participants [99].

Culture and Value and its association with online buying

The customer's cultural values system was seen to be having a deeper impact on the consumer's action and decision-making towards using the e-commerce and eventually adoption. These social or cultural values are "lead indicators" to the end consumer's perceived risks and responsiveness. [12]. In an economy or geolocation, the regional or national culture also directly influences the end user's intentions & beliefs to adopt e-commerce. [18]

Customer Satisfaction and its correlation with online buying

Retail customer satisfaction displays a high positive correlation between the consumer online spending. Similarly, the other end user's factors of similar kinds like e-service quality, e-satisfaction and e-loyalty also show high correlation with the high online spending. The main barrier in the retail user's satisfaction is the online platform's inability to provide the touch, feel and trial of the products which need to be worked upon these eCommerce companies. [25] In the developing economies, the key challenges to the adoption of eCommerce hovers around the inability to touch, feel and try the product being bought and furthered due to lack of awareness of the security around the payment system. [27] High quality of website UI/UX propagates the retail user's engagement which is a big differentiator in maximizing the engagement of the virtual profiles of the web traffic users. [40] Online buying experience and the motivations to do so - both have a positive correlation and together help in leading the buildup of high purchase intentions. [49] The physical channel / mode of sales and purchase is generally more encouraging for the impulse buying by buyers than the online platforms. Traditionally, the physical channels can trigger the impulsive buying behavior to a greater extent



compared to the online channels. [56]. The value creation at a desired price point generates a stronger effect on the overall end user's satisfaction for light shoppers, while initial trust had displayed a stronger effect on end user's satisfaction for heavy shoppers. The end consumers' irreplaceable value creation through a perishable asset generation from past transaction made over online store had strong correlation on their loyalty-based responses. [63] The end customers who visit and buy online, generally lay importance to the customer experience generated through the quality of the services provided over their products. [67]

Millennial Customers & Gen Y and association with online buying

The key factors which generally induce the online buying behavior in the millennial users are: innovative features, anticipated benefits, perceived risks, social attitude and buying intention. [28]. The millennial consumer's intention to buy online is greatly impacted by the utilitarian value creation per order, general attitude toward internet enabled commerce, display and easy availability of information related to product and services, and associated hedonic satisfaction. [29]

The generation Y has a different approach and they remain elusive and unpredictable consumers in uncertain markets. They have largely varied buying preferences and styles generally associated with the factors like: quality & brand consciousness, innovation and novelty in the products features, hedonistic pleasure, fashionista, spoilt by choices, habitual and happening brand loyalty. The Y generation consumers were more distracted by over choices as compared to the consumers who belonged to the older generations [80].

During the COVID times, more consumers, mainly from the small baby boomer and silent generation were attracted to online shopping due to closed physical stores and infection risk. Majority of end buyers reported that they planned to continue use the e-commerce platform. The increased in traffic of customer to shop & interact online is seen as a new reality.[98]

Demographic / Old Age Customers and its influence on online buying

Studies conducted around an integrated model which was coined as 'Unified Theory of Acceptance and Use of Technology (UTAUT)' and another contemporary research-based model 'Innovation Resistance Theory (IRT)' concluded that the major factors influencing the senior citizens to conduct the online buying are performance expectation and social influence; the both of which are very well comparable to the younger age buyers. The key barriers included the value creation offer across the various micro age brackets, risk assessment and valuation, and social & cultural value or traditions

in which they had grown up and which are in distinct contrast to the younger age customers. The older age buyers do not display any gender based differentiated alignment in regards to these drivers of buying behaviors and associated barriers. [48] The old age consumers' demographic factors like age bracket, disposable income, level of education and marital status, all having high correlation with the perceived usefulness of the online offerings and significantly influences the intention to shop online. [70]

Marketing, Brand and Communication and its influence on online buying

In the ecosystem of the online commerce, the largest influence is made by the marketing communication process. This aspect has a capability to generate very high motivation among the customers to take favorable decision towards visiting the online platforms and eventually taking buying decisions. This aspect is a key differentiator to define the buying behavior of the consumer between physical and online buying. [36] The online products offerings carrying a better brand image generally influences consumers' online buying intentions while generating confidence as it both directly and indirectly reduces various risk perceptions associated with the online platforms. Accordingly, the images or videos of the online platform quite well influences the purchase intentions of a retail buyer indirectly by reducing the risk perceptions. [55]

The retail customer's engagement built and associated around an emotive experience, and it is observed that creating an emotional bond is a difficult proposition while being done through technological mediums like websites or apps. Retail customers can feel frustrated, disenchanted or annoyed with perceived over usage of technologies as the online brands may struggle to assure the same quality of services online as they easily do offline. The leading research firm "Gallup" shared their analysis that more a retail customer buys online, the higher are the chances to become brand antagonistic.[67]

The online platforms / stores need to leverage benefits of the customized marketing by micro segmenting their buyers into sub-groups based on buyer's psychographic data and thus penetrating better with the communication. This may generate profitable activities as creation of bigger value proposition for retail buyer segment wise may help build common purchase intentions to buy online. [75] There is a clear interplay between a physical seller's brand image and an online brand image. The perceived risk for online purchase and brand loyalty exists within the theory of cognitive dissonance. The physical seller's brand image exerts major influence on the online brand image as well - which significantly correlates with the online perceived risk - and further with the customer loyalty towards the online buying. The indirect halo influence of an offline brand image has a correlation with the direct effect of online brand



image. The online brand performance may also generate a direct influence on the retail consumers' perceptions, expectations and loyalty from any multi-channel sales model. [78] There is a direct correlation between the online store brand image and perceived quality of the product of services offered by the store. The brand image has significant influence on the online buying intention for private label brand (PLB). The indirect influence is easily moderated by relationship between end user's perceived risk and their price value consciousness. The online store brand image is seen to display a direct and positive correlation between the purchase intention of the PLB. The quality levels of the services offered by online store makes a significant & direct influence on the PLB image. Accordingly, the end user's perceived risk of PLB products demonstrates to have a significant mediating effect on the correlation between the online store brand image and the consumers purchase intention of the PLB [87]. Internet user (aka influencers) generated marketing videos significantly influence other users' attitudes toward the brand [106].

Knowledge & Information Management by eCommerce Portals & its influence on online buying

There are three factors which make significant impact on the quality of information searched by end users on online commerce platforms are knowledge - acquisition, dissemination and sharing and various approaches / mechanisms are deployed by the online commerce platforms to address these factors as part of design thinking. [26] The end consumers consider the role of information management as pivotal and central while considering the comfort of online shopping environments. The deeper quality levels of information availability greatly influence the end users to positively respond to the online offers made. [39] The further three key categories which influence the buyer's intention are - easy understanding, fullness of the information and continuous evolution of the website qualities thus forming a reason to envisage behavioral responses. [39] The quality of the information published, UI/UX quality and cyber security perceptions influence the user satisfaction build around the information deck and the ensuing relational benefit which are significantly related to end user's website loyalty and actual online buying behavior. [82] Search facility in eCommerce requires matching a customer request towards a combined function of structured (such as product catalog) and unstructured (such as customer review) data and may span multiple online sites (commerce and non-commerce) as well as physical stores [95].

Barriers to the eCommerce Growth in a Nation

The shortage of the end user's initial trust, insufficient support towards the laws of land, lack of legal framework, internet enabled technology infrastructure are some of the key deterrents for the adoption of the ecommerce

in any nation. Other socio demographic factors such as average age, generic education of the buyers, and customer relations of business affects e-commerce. [52] The fast-rising concern of the users towards the environment being carbon neutral is also seen over the ecommerce purchase, where buyers while insisting faster delivery appreciate the shared economy platforms for delivery fulfilment.[101]

Buyer Technical Skills and its correlation with online buying

The end user's preference over the online platforms considers the relative importance of features of online buying platforms and betterment of these are seen to increase buyer's purchase intention. Equally the consumers having different levels of computer skills, understanding and expertise were seen to generate differing preference patterns. [62] However it was also observed that there is insignificant correlation between the online buying and the end user's educational qualification - which construes that educational qualification doesn't have any major influence on the online buying. [64]

Governance of eCommerce Industry to promote online buying

There are many factors across the category of determinants and deterrents which have influence over the growth & adoption potential of e-commerce in any emerging economy. These are identified at three levels. At the international level, some factors which make a difference are like multilateral agreements between governments, strategic behavior of multinational companies operating across the internal borders and various technological innovation leveraged by the enterprises. At the national level factors which make a difference are like institutional economic environment, technology infrastructure and conducive national culture. The transactional level covers the degree of integrity of transactions, availability of the reliable online intermediaries, externalities and value clustering. These key factors collectively create environment towards the growth of e-commerce in developing economies. [46]

Usage of Artificial Intelligence in e-commerce

While Artificial Intelligence helps to improve the customer experience it also helps the ecommerce companies in conversational commerce. In addition, AI helps in real-time human interaction via interactive modes like messengers, chatbots, voice-chats and so much more. The AI bots leverage interactive Q &A to offer the customized recommendations towards their expectations and requirements which eventually builds high levels of customer satisfying experience leading to higher and profitable sales [96].

In the mobile commerce the usage of the cloud-based



edge hybrid processing model helps in faster information processing. To provide timely support responses, the cloud-edge based dynamic reconfiguration is recommended. The value attribute helps to assess the stability whereas the cost attribute helps in the cost attribution to service invocation. Further usage of long short-term memory (LSTM) neural network helps to predict the stability of services, which relates to the value attribute. The candidate services are selected by considering both service stability and the cost-of-service invocation.[100]. The various AI techniques like text-mining, machine-learning and econometric techniques which capture the factors influencing buyer's emotions in terms of reflecting and predicting customer satisfaction, work towards the success of the eCommerce.[105]. With support of Industrial IoT, the involved workers, materials, and machines are turned into smart components, deployed in the real-time processes enabling faster end user order fulfillment [109].

UCCCEEE framework (Seven Personality Traits) Influencing Digital Quotient of an Individual associated with transactions on digital medium

An end user's digital quotient is correlational to a set of key behaviors that are differentiated and propelled by key personality traits. Among them the trait which has a significant influence is updated. This is understandable since the digital revolution brings a sizeable impact on the information availability which was hitherto not available. The trait of efficiency is close to being very important trait as well as it related to intensity of the urge an individual has to leverage tools for outcome and emerging technologies are opening up new vistas of performance and productivity. The UCCCEEE framework of personality traits which signify the digital quotient was arrived at independently, with study conducted at the exploratory and empirical level. However, it draws some similarities with the five traits of the Big 5 model.[89]

Frequently used online platforms

The term "online platform" is describes a store built, operated & accessed over internet extending a wide range of services including but not limited to the marketplaces, search engines, social media, creative content outlets, app stores, communications services, fintech & payment systems, services comprising the so-called "collaborative" or "gig" economy, and much more.[91] It also operates as a digital service which may facilitate multiple party interactions / transactions over internet considering options between two or more distinct but interdependent sets of users (whether firms or individuals). [91] The online services where physical goods are not involved have been very active in last decade like fintech / travel / hospitality / taxi services etc., however with covid onslaught the online goods sales & delivery has picked up multifold.

3. RESEARCH GAPS

The rigorous literature review has provided an understanding of the extensive research that has happened at a significant scale over the last few decades. The research work study and analysis show that good number of insights are available across the technology and design related factors like design language, website features, customer experience using UI/UX, user navigation and ergonomics and creating marketing research based compelling target commercial offers for users of the online digital platforms, eventually facilitating the end-user adoption. The literature review across 200+ research work/papers shows that enough reflections were made at the level of user end experience enrichment thus enabling the digital platforms to build a lasting and effective impact on the users.

A lot of this can be attributed to the study of the various psychometric model in the space of technology adoption (as shared in the literature review section). These researches done on the correlation between the human psychological factors & digital platform adoption patterns closely explores by leveraging the old but established models like Big 5 trait model and theory of reasoned actions (TRA) and therefore do not reflect on the psychological factors or personality traits of the new generation end users aka millennial or the Y generation which is evolving to become the major users of the digital platforms.

The study referred to in the reference list [89] was undertaken by the author of this paper earlier to address the gap between these models and behaviors of the fast-evolving next generation, which may not be similar to the previous generations. The socio-psychological factors of the digitalized society are differently propositioned and similar construct is being seen in the socio-economic models. The previous study undertaken by the author worked upon this gap and argued and identified the seven personality traits as key factors which influence the digital quotient of these individuals and accordingly their behaviors.

While the previous research by author brought forward a taxonomy framework of UCCCEEE and also proposed that end users' behaviors are dependent on these traits, the paper recommended further study or continued research to be conducted to study the correlations between these traits and any specific user behavior. For example - the research paper left it open to be studied that which particular traits has a higher coefficient of correlation with any specific end user behavior. The earlier research paper by the author also does not signify any correlation within these traits as a matter of their co-existence while making an influence on the end user behavior.

Therefore, an opportunity exists to study further these traits and their correlations in specific behaviors of the end users towards the stimulus sent over the digital online platforms (see online platforms definition in subsection in literature review page 16 or reference list [91]). This



study as discussed in this paper has been focused on the eCommerce or online buying behavior of the end users. The author hopes to further understand the UCCCEEE framework efficacy and relevance against its stated proposition. The specifics of the eCommerce related correlations may further add to the literature available but with having additional insights towards how the end user's personality traits may make an impact on the online buying industry.

The research done in past don't reflect sufficiently on relationship between key personality traits as drivers of the online buying behavior of the users and their influence towards adoption of the digital platform-based services. The identified research gap through the literature review may have a limiting impact on the efficacy of design of features and offerings on the online platforms. The research work and findings of this paper has brought initial insights on the subject and it may help the eCommerce sellers to optimize their products and services to this aspect.

4. RESEARCH METHODOLOGY

Research Design The research design work included 06 phases as stated below and applying different actions and methodologies at various stages as were found relevant including descriptive, exploratory, qualitative & quantitative approaches. The analysis and interpretation wherever needed were conducted by leveraging the Pearson Product Moment Correlation Coefficient (PMCC) or simply put as Pearson Correlation Coefficient.

Phase 1: Literature Review on eCommerce

The literature review as conducted above included studying various research work done in the space of eCommerce and identifying the associated factors which influence the adoption by the retail customers or societies at large. The sources included around 200 plus published papers or articles across the world; out of which 91 were found to be relevant (See references).

It also included several publications as are available from online service providers or management consulting firm's knowledge dissemination available over the internet. (See references).

The objective was to deduce top factors which are displayed by the retail online buyers who are engaged on the online buying platforms. These factors were as part of the research findings or as a matter of empirical analysis. The author of this paper has distilled and brought forward these critical factors which have been either very commonly discussed across the various papers or some of them were specifically being spoken in this reference only. These factors are being stated below in phase 2 and later through word cloud analysis, were used as part of the correlation analysis with the UCCCEEE personality traits at a later stage. The author does not warrant that these factors are comprehensive & all-inclusive list of behaviors as displayed by retail online buyers; however, all these

factors were observed to be relevant and sufficient for analysis as observed during the literature reviews.

Phase 2: Identification of the Key factors which are displayed by the users towards online buying

The key factors as mentioned in phase 1 above and which were identified in word cloud and shortlisted based upon the relevant score and frequency of occurrence basis for the correlation analysis are as: Discounting, Delivery; Comparison; Convenience; Information; Time Saving; Social Peer Reviews; Quality; Content; User Experience.

It may be noted that study did not start with any biases to differentiate between any of these factors with respect to their rank of importance of influence. It considered all of them to be equally important as the study proposes to analyze the correlation between the seven personality traits of an individual and these factors. The purpose was to study which among seven traits out of UCCCEEE framework would have high-high positive or negative correlation with which of these ten factors. This would help define a relationship between a psychometric profile and its positive correlation with the dominant factors.

Phase 3: UCCCEEE framework analysis and Psychometric Test Design and Administration - DQ Profiling of an online buyer.

The UCCCEEE framework referred in the earlier research work done & published by author refers to seven personality traits (updated, confident, connected, curious, efficient, epicurean and experimental) which are considered to be major influencers on measuring and defining the digital quotient and eventually behavior of an individual on any online platform. This paper considers this framework as a baseline for personality profiling and leveraged this framework to build the psychometric test for profiling the individuals on whom the field surveys were to be conducted.

Based upon the study of the UCCCEEE framework, a psychometric test was designed to identify the digital quotient profile of an individual and to also identify which among the seven traits were dominating the profile of the stated individual. The psychometric test was built consisting of situational questions. They were in total 28 questions with 4 questions per trait. The questions were randomly camouflaged as positive or negative connotation so as to not become easily identifiable with a trait by the respondents. Advisory from a professional & trained psychologist in the space psychometric tests was taken to summarily check the veracity and construct of the test. The test was built on a range scale score method with 0 and 100 being the min and max scores. The individuals score was averaged out on each trait and finally an overall average was also taken for seven traits termed as digital quotient profile score. The results helped in assessing overall digital quotient score of an individual besides identifying the



trait level score. The scores helped in defining both the dominant traits and recessive traits. The psychometric test was released to respondents at Cronbach Alpha reliability score of 0.7962.

Phase 4: Validation of the Psychometric Profiling Test

The purpose of this validation exercise was to check if there is any positive correlation between digital quotient score as achieved on the psychometric test and the actual digital awareness, knowledge & digital aptitude of the individuals. The validation was done by conducting an additional test for the individuals who were willing to take the psychometric test. This test was an objective type questionnaire and subject was awareness of the digital ecosystem.

Phase 5: Design of the eCommerce Survey based upon 10 Factors (phase 2) influencing the buying behaviors

The purpose of this exploratory test was to capture what does the target respondents consider as critical amongst 10 factors stated in Phase 2 while they conduct an online shopping. The test was having two questions; the first one being to rank order the 10 factors with respect to their preference for consideration during purchasing online; second one being - against each of these 10 factors, on a rating scale of 0 to 10 provide the score of impact it would make in their decision to conduct a purchase online.

Phase 6: Administration of the Psychometric Profiling Test (DQ Score) and eCommerce Survey (Online Buying Behaviors)

After phase 1 to 5, the final phase 6 was to administer two tests simultaneously to the target respondents. The approach was to generate the digital quotient and profile of the respondent with scores against each of the traits. Simultaneously the response was also generated on the factors considered by them as critical while conducting the online shopping. The correlation was studied between seven traits and ten factors to assess the findings and to draw if there were any significant observations and conclusions.

5. SAMPLING & DATA COLLECTION APPROACH

The target sample for field surveys were considered through a combination of structured and randomized sampling techniques to distill biases and yet retain fairness and objectivity in the rich data collection. The target respondents were needed in the research phase of phase 3 to phase 6. The following techniques were used in stages to distill the target samples.

Stage 1

The geographic cluster sampling technique was leveraged to identify a metro city in India having a good tech savvy working population and also having high

density & volumes of eCommerce purchasing over last 3 years. Based upon the past published data the conclusion was drawn to conduct the survey in city of Mumbai which met these two criteria. The city of Mumbai included the neighbouring associated residential settlements/townships like Pune, Thane, Navi Mumbai etc. [90]

Stage 2

The stratified sampling technique was leveraged to shortlist the target respondents considering the following demographic based criteria; digital technology skill / exposure, working class with above average per capita income, active social media usage, active smartphone usage, age between 25 years to 50 years, active e-commerce exposure and good interactive communication. Given the need to study the correlation with eCommerce, the sources identified were from IT industry segment of working class & their families in residential societies. The opening contact was made verbally through references to explain the objective and purpose of the survey. The convenience sampling technique was leveraged to seek respondents who agreed to the primary survey requirements of the stages (3, 4 and 5) across the research & analysis period of 8 months. An initial list of 282 possible respondents was prepared after gathering random data through primary contacts in these cities/townships. An outreach to this sample of 282 people helped in drawing out a qualified target population of 178 respondents for these stages (3,4 and 5) out of which 116 finally contributed for DQ profiling survey and 95 for eCommerce survey. Once the initial tests were independently validated, the final round of conjoint analysis was conducted for stage 6 wherein data from these 178 respondents were distilled and a total of 83 were considered for analysis. This sampling technique generated a 95% confidence level and a +11-confidence interval, which was acceptable given that we had a representative population size in these cities of over 25 million.

Data Collection

Based upon the convenience of the respondents, the data were collected through responses over combination of two modes-browser enabled webforms and over telephonic / face 2 face conversation.

6. DATA ANALYSIS AND INTERPRETATION

The research period was between August 2020 to April 2021.

SECTION 1: Exploratory Study Analysis: (Table I, Page No. 258)

Exploratory study of the literature provided a list of key words which were found relevant for driving the usage of the eCommerce among the users. So as to filter the most preferred ones, a word cloud model was created as below. This was conducted on the basis of their frequency of occurrences in various papers given under the references list



in this paper and words which had higher relevance score were identified to be compared with the seven personality traits.

IDENTIFICATION OF KEY FACTORS WHICH HAVE INFLUENCE ON THE ECOMMERCE AS PER LITERATURE REVIEWS ANALYSIS.

TABLE I. KEY WORDS WITH RELEVANCE SCORE (RS) AND FREQUENCY OF OCCURRENCES

Factor	Frequency	Relevant Score (RS)
Convenience	26	0.296
Discount	22	0.273
Time Saving	21	0.776
User Experience	20	0.739
Comparison	20	0.172
Content	20	0.14
Delivery	19	0.171
Social Peer Review	18	0.998
Quality	18	0.122
Information	18	0.091
Ease of Use	8	0.044
Satisfaction	3	0.035
Authentication	2	0.028
Branding	2	0.023

Based upon the frequency and RS score out of 25 distinct factors, the 14 high scoring factors were shortlisted. Finally, top 10 were considered for gathering feedback from the correlation analysis as they were carrying high comparative values. eCommerce shoppers generally demand higher convenience along four modes of engagement website access, search engine, transaction & delivery compared to the in-store buyers. [58] User consider cost savings as key behavioral driver to come back for online buying.[7] The scale of discounting in the prices attracts the customers towards online buying as compared with the offline buying. [51] The lesser time taken by user on the websites coupled with buying comfort during buying motivates customers towards buy online. [51] The Product's Information - quick turnaround and availability of the details, Quality Management, Order Fulfilment / Delivery timelines have a positive affect over end user towards online purchasing behavior. [57] The end user's convenience, clarity on content and competitive pricing / discounting presenting with a wider option range to make choices has shown to positively influence a buyer's intent towards online purchasing. [66] The online store's brand image is positively correlated with perceived quality of products or services offered by the online store which has further direct and positive correlation with purchase intention.[87] The review depth on social platform by an existing online user makes a greater positive correlation on the helpfulness for search goods towards a new buy. [35] The interdependencies of associated analysis by previous users on social network media is actively used by new consumers as a technical support system in the

decision-making phases [42].

SECTION 2: UCCCEEE framework and Psychometric Profiling Analysis (Table II, Page No. 259)

The seven personality traits which have a big-time influence on the digital quotient of an individual are Updated, Confident, Connected, Curious, Efficient, Epicurean and Experimentative. These traits have been well explained in the paper [89]. However, since the paper didn't delve into the individual trait's calculation method for an individual, the correlation between each of the traits was not available in the previous study. The preparatory psychometric test with a Cronbach reliability score of 0.7962 conducted in this study provided a set of data which helped the correlation between these traits.

High-High Correlation

(Table III, Page No. 259)

The following traits show significantly high correlation relationship. That means if one trait is prevalent than other is also likely to exist for an individual and is very likely that both will have joint significant impact on the individual's behavior towards any stimulus received over the digital medium.

Moderate-Moderate Correlation

(Table IV, Page No. 259)

The following traits show significantly medium correlation relationship. That means if one trait is prevalent than there is a chance that the other trait may also exist on a moderately high correlation basis. It is quite likely that both will have coordinated impact on the individual's behavior towards any stimulus received over the digital medium.

Low-Low Correlation

(Table V, Page No. 260)

The following traits show significantly low correlation relationship. That means if one trait is prevalent than there is a chance that the other trait may insignificantly exist on a low correlation basis. It is quite likely that both will not have any coordinated impact on the individual's behavior towards any stimulus received over the digital medium.

Note: The correlation stated above on bi polar basis. However, since an individual's behavior is dependent upon seven traits, the behavior is best studied together considering the total DQ score together with Individual Trait score across all seven traits of UCCCEEE framework and /or combination of correlation between these seven traits.

Psychometric Test based Profiling of Target Respondents and validation of the test results.



TABLE II. PEARSON'S CORRELATION COEFFICIENT ANALYSIS WITHIN THE SEVEN TRAITS

Inter Trait Correlation Analysis		Seven Traits of the UCCCEEE framework						
Seven Traits of the UCCCEEE framework	Updated	Updated	Confident	Connected	Curious	Efficient	Experimentative	Epicurean
	Updated	NA	-0.154	0.441	0.337	0.753	0.321	0.114
	Confident	-0.154	NA	0.144	-0.176	0.086	0.081	0.431
	Connected	0.441	0.144	NA	0.213	0.424	0.357	-0.302
	Curious	0.337	-0.176	0.213	NA	0.2	0.071	0.118
	Efficient	0.753	0.086	0.424	0.2	NA	0.433	-0.212
	Experimentative	0.321	0.081	0.357	0.071	0.433	NA	0.337
	Epicurean	0.114	0.431	-0.302	0.118	-0.212	0.337	NA

TABLE III. TRAIT VERSUS TRAIT CORRELATIONS - HIGH

Trait	Trait	Person Coefficient	Remarks
Efficient	Updated	0.753	Updation linked with information and knowledge seems to coexist with efficiency (including vice versa)
Connected	Updated	0.441	Individual who are driven by gathering of information also display need to connect with others. (including vice versa)
Epicurean	Confident	0.431	Individual who are confident may grows as someone who indulge in hedonistic choices or relaxed behaviour. (including vice versa)
Connected	Efficient	0.424	Being Connected in the digital ecosystems drives in efficiency in your plans and actions. (including vice versa)
Experimentative	Efficient	0.433	Experimentative nature brings in a mindset of result orientation which encourages efficiency. (including vice versa)

TABLE IV. TRAIT VERSUS TRAIT CORRELATIONS - MODERATE

Trait	Trait	Person Coefficient	Remarks
Curious	Updated	0.337	Curiosity and information seeking behaviour seems to work in tandem over the online platform. (including vice versa)
Experimentative	Updated	0.321	Individual who Display Experimentative nature online are generally also information seekers. (including vice versa)
Experimentative	Connected	0.357	Individual who display epicurean behavior generally end being reclusive and they show less intent to connect publicly at large. (including vice versa)
Epicurean	Connected	-0.302	Being Connected in the digital ecosystems drives in efficiency in your plans andactions. (including vice versa)
Experimentative	Epicurean	0.337	The epicurean behavior is seen correlated with an intent to explore more as part of betterment of outcomes. (including vice versa)
Efficient	Epicurean	-0.212	epicurean may not always be conscious about the cost and will normally like to avail best output irrespective of the costs. (including vice versa)
Efficient	Curious	0.2	Individuals who are also found to be focusing on efficiency as a by-product of their behavior. (including vice versa)
Connected	Curious	0.213	Curiosity may bring a behavior to know more through reaching out to more people. (including vice versa)
Confident	Curious	-0.176	Individuals who display low on their confidence on a subject generally also display an urge to know more - displaying a negative correlation coefficient. (including vice versa)

(Table VI, 260) and (Table VII, 261)

The psychometric test as was originally designed was administered to target respondents to know their digital quotient. The participants were working tech savvy professions and randomly distributed between age group of 25 years to 50 years with average working experience of 12 years and standard deviation of 6.64.

The respondents were rated on a scale of 0 to 100 and the mean score (DQ score) among all the participants was 60.41 while the min was 17.54 and max was 76.96 with the standard deviation as 10.90. At individual trait levels the respondents scores were as below.

So as to analyze the correlation between various traits and total DQ score, the Pearson correlation coefficient was



TABLE V. TRAIT VERSUS TRAIT CORRELATIONS - LOW

Trait	Trait	Person Coefficient	Remarks
Confident	Updated	-0.154	Individuals displaying low confidence generally show inquisitiveness to know more on online platforms as a source to complete the gaps. (including vice versa)
Epicurean	Updated	0.114	It is seen that individuals who tend to be classy are selective in their gathering of information and may not be very active in their information related pursuits over the online platforms. (including vice versa)
Confident	Connected	0.144	Individuals who are low on their confidence are generally do not show up widely and regularly connected. (including vice versa)
Experimentative	Curious	0.071	Individuals who are curious may also be Experimentative but not always. It needs to be seen together with other traits scores. (including vice versa)
Epicurean	Curious	0.118	Epicurean people show less curiosity as they generally have lots of time at their end and they have selective choices and therefore less scale to lookout. (including vice versa)
Confident	Efficient	0.086	Individuals who are low on their confidence generally don't appear to be very efficient. (including vice versa)

TABLE VI. PSYCHOMETRIC TEST META DATA

Individual Trait Wise Psychometric Sample Test Score Analysis				
<i>Total Respondents = 83, Mean DQ Score = 60.41, Minimum = 17.54, Maximum score = 76.96, Standard Deviation = 10.90</i>				
Traits	Average	Max	Min	Standard Deviation
Updated	76.78	100.00	01.00	20.40
Confident	50.40	82.50	01.50	12.10
Connected	56.96	99.50	01.75	15.53
Curious	41.24	99.00	01.00	18.24
Efficient	75.17	100	01.00	19.56
Epicurean	68.10	100	24.00	11.46
Experimentative	61.93	99.75	00.00	18.69

calculated. The correlation is analyzed to arrive at their influence on each other. It may be noted that overall DQ score correlation coefficient with Digital Ecosystem Awareness (DEA) and General Aptitude (GA) was at 0.390 and 0.274 signifying that DQ scores of individual respondents had a high positive & moderate correlation with Digital Ecosystem Awareness (DEA) Knowhow as well as General Aptitude.

The correlation between various traits and consolidated DQME score is analyzed to arrive at their influence. It was concluded that while the test's reliability was acceptable at 0.7962 however a close correlation between seven traits and awareness and aptitude brings an added validation. The positive correlation coefficient of the individual's DQ score with the score of DEA and GA was considered as a validation since they provide another objective facet of the individuals personality but with similar digital outlook.

eCommerce Literature Survey (Section 1; Fig 1 and Table I) based upon 10 Factors & Analysis with the Psychometric Profiling Test

(Table VIII, 261) and (Table IX, 261)

The eCommerce survey was conducted on the basis of

survey question where respondents were requested to score on a range scale of 0 (least) and 10 (most) against each of the 10 factors importance in influencing their decision to engage an online buying portal for their purchasing needs. The Table VIII and Table IX provides analysis of the data from this survey.

The analysis suggest that the users generally consider online buying provides more relevant and useful *information* which helps in decision making than the physical means of buying. This is followed up by the factor of *content* which provides sumptuousness while facilitating through the ease of *comparison* in their assessment of the purchase at the level of *convenience* which is not available in the traditional physical mode of buying. The easy to relate *User Interface or Experiential Aspects* adds up to the overall experience which often acts as a catalyst towards online buying. Any great offer which culminates into attractive price *discounts* keeping *quality* intact and *timely* home delivery sums up the decision to buy online quickly. If this helps in *time saving* at the user end then it becomes a motivating factor for the user who would often reach out to their social handles to share their experience and may subtly advocate for you to other. The *social influence* kicks in here onwards as a network effect.

TABLE VII. CORRELATION BETWEEN SEVEN TRAITS AND 'DEA' AND 'GA'

Pearson's Correlation Coefficient between Traits and other Factors for the target respondents			
Overall	Correlation Coefficient of DQ and DEA & GA = 0.390 and 0.274, GA average = 58, STDEV = 25 DEA = 0.61, STDEV = 0.12		
Traits	DQ Score	DEA Score	GA Score
Updated	0.793	0.211	0.198
Confident	0.170	(-) 0.027	0.026
Connected	0.687	0.010	(-)0.162
Curious	0.480	(-) 0.051	0.034
Efficient	0.826	0.275	0.224
Epicurean	0.722	0.323	0.356
Experimentative	0.633	0.155	0.278

TABLE VIII. MEAN SCORES OF 10 FACTORS AS A REASON FOR INFLUENCING

Ten factors which influence the online buying behavior										
	Discount	Delivery	Comparison	Convenience	Information	Time Saving	Social	Quality	Content	UI/UX
Mean Score	6.80	6.01	7.47	7.45	7.78	5.89	5.32	6.14	7.71	7.29
Rank Order	6	8	3	4	1	9	10	7	2	5

TABLE IX. CORRELATION COEFFICIENT BETWEEN 'DQ' TRAITS AND FACTORS INFLUENCING ONLINE BUYING

Ten factors which influence the online buying behavior											
Overall score of DQ plus seven Traits individually		Discount	Delivery	Comparison	Convenience	Information	Time Saving	Social	Quality	Content	UI/UX
	DQ score		0.426	0.026	0.332	0.162	0.317	0.223	0.435	-0.062	0.553
Updated		0.112	0.017	0.331	-0.132	0.417	0.030	0.149	-0.035	0.210	-0.150
Confident		-0.297	-0.099	-0.067	-0.158	0.165	-0.018	0.263	0.094	0.012	0.323
Connected		0.403	0.113	0.308	-0.201	0.194	0.033	0.391	0.259	0.021	0.354
Curious		0.170	0.271	0.307	-0.115	0.215	-0.055	0.191	0.161	0.256	-0.106
Efficient		0.433	0.313	0.225	0.491	0.151	-0.086	-0.118	0.241	0.015	0.174
Experimentative		-0.101	0.034	0.251	-0.318	0.441	0.143	0.293	0.008	-0.182	0.162
Epicurean		-0.031	0.113	0.293	0.415	0.118	-0.141	0.078	0.322	0.412	0.293

The correlational analysis of the 10 key factors influencing eCommerce with the 07 traits influencing a buyer's DQ score based on UCCEEE framework is a good measure to assess how an individual responds to the online buying opportunity.

The first row provides the Pearson's correlation between the overall DQ score and the 10 factors at individual level. The next rows provide the correlation coefficient between the individual trait scores and the response score against the individual factors. The objective is to assess how a particular trait influences a particular factor. Depending upon the how an individual seller is positioning its products or services, the seller can correlate it with the key traits of the buyer's profile which may help in active or positive decision making.

7. DISCUSSION AND CONCLUSION

The online buying model is one of the fastest growing commerce models especially with the background of the advent of global digitalization. While economies preparing to respond in their own might and way, it is important for any seller to also understand what are the drivers for an individual customer to make an online purchase. The

modes of eCommerce may vary from PC based to mobile devices based. The purchase cycle process be generated as part of the tangible needs of an individual of social peer-based activation of a latent need. In the end it is important for any seller to know its customer even in online platform just like it applies to a physical means of buying and selling. While a lot has been researched over a century considering the physical means of buy-sell; the online medium for the buy-sell is still in its early phase. The research done over last few decades has been largely on the "push based from the seller view point but gravitated around the technologies, design and features of the platforms". This has worked reasonably well and over last decade after many iterations the eCommerce has kind of started to become a way of life in many parts of economies. However, the conversion ratios (per visit) still remain in single digit (2~3%) where as in physical world it hovered around (7~8%). This makes the ROI a challenge for the businesses vis a vis the investments made currently in the eCommerce space - especially the working capital. Unless we work to get the higher conversion ratios, the eCommerce may still remain a challenger to the physical means and not the priority mode of buying for the customers.



The paper has made an attempt to study the research work done over last few decades and considered over 200 plus publications on this subject out of which 90 are provided in references. The first work rendered was to identify key factors which make a differentiated impact on the online purchaser. This culminated into 25 factors which were further distilled to 10 key factors based upon relevance score and frequency of occurrences across these published works. The further validation of the same with the respondents of field work only ratified the shortlisting of the top 10 factors.

This paper has also leveraged an early seminal study done by the author as part of the PhD scholar and has been accepted to be published by University of Bahrain. This study brought forward an analysis of the same topic from the buyer personality traits point of view.

The seven traits theory put forward under a taxonomic framework helps identify the influencers on a buyer buying behavior. The correlation between these 07 personality traits for an individual's digital quotient and the 10 factors influencing the eCommerce buying is an interesting space to research helping to further define priorities for the sellers wrt to design, offerings, communication etc.

Some key highlights include those individuals having high digital quotient have a high correlation with factors like social, information, comparison and discount which states that if a seller focusses on improving the information dissemination along with comparison between features with other competing products, the digital savvy customers may consider it as a differentiated advantage. Is this is furthered with an unmatched discount then it improves the chances of buying. Do not forget to link this to social media handles or platform - pre and post sales as generally the digital savvy buyers either start from there or may end up there - irrespective of good or bad experience.

Having identified the above, it is also important to know that if two people have similar total score of DQ, then the behavior of the individual may vary to the same offerings made. This is where the 7 traits score and its correlation to the 10 factors may come and help. For ex. Two individuals who may appreciate discounts equally may not respond positively based upon their score on parameters like connected and efficient. Those who score high on efficient may expect execution excellence of delivery and quality which may need for further reinforcement of the offer. Those who score low may accept as it is but you need to be thoughtful around high-high correlation models in other traits-factors relationship to make an effective sales pitch.

This study concludes that for any sales pitch to be successful the sellers need to closely study the correlation between 7 traits and 10 factors closely and then make the customized pitch to an individual. This shall help build a higher conversion ration against all online visits and bring better returns to the time, efforts and investments made by

the sellers on the online platform.

8. SCOPE FOR FUTURE RESEARCH

The field study is of an exploratory in nature and data sources were limited to a few geographic clusters in and around Mumbai the biggest metro city in India. Despite the fact that Mumbai may provide an excellent representation of the wide spread in the sample, a study inclusive of tier 2 and tier 3 would give more comprehensive and inclusive results - buying behaviors may alter based upon demography of smaller establishments especially in a developing country like India.

There is a need to study the findings and refine the analysis and recommendations on a broader scale to improve the reliability of the findings. The sample used in this study does not cover the rural population, therefore, aspects related buying behavior of the population impacted by the rural socio-economic factors may not be covered. The digital transformation covering the various societies across the world is evolving at an overwhelming rate including the evolution of the online commerce space, therefore, the consistency of correlation analysis across the longitudinal timeline needs to be studied.

The current study period spread over 08 months and is limited to respondents coming from tech savvy background and working-class population. A further study toward defining an individual's profile based on the UCCCEEE framework but from diverse sections of the society may help in the evolution of the framework itself, which may further provide insights into the purchasing behaviors especially with respect to social and economic behaviors.

Further research focusing on the correlational relationships between these personality indicators and online transactions covering industry specific product or services sales may provide better insights for micro marketing strategies and identify better and fruitful targets.

Further study of these traits-based personality indicators may have the potential to identify customers with specifics of their digital quotient and segregate them on the basis of their personality traits-based profiling so as to address them as market of one.

As the researchers have adopted strategic segmenting-based convenience sampling, the observations and conclusions made in this study may have limited generalizability. The results of the study can be further validated using a large sample.

ACKNOWLEDGMENT

I Rahul Shandilya, the author, gratefully thank Ms. Pallavi Maitra, an established psychologist in India in the space of psychometric tests design and validation for providing me necessary advisory during the field work and data analysis. I also acknowledge help extended in field research work especially by bringing in perspectives of



millennials / Gen Z by Ms. Noynika Ahuja, third year student of computer engineering at Thodamal Engineering College, Mumbai University, India. I extend my thanks to Dr Bhawna Garg and Mr. Vivek Kadam for helping me construct the Latex files for this paper as per requirement of the journal.

REFERENCES

- [1] Migrating to internet-based e-commerce: Factors affecting e-commerce adoption and migration at the firm level, Weiyin Hong., Kevin Zhu, *Information & Management* Volume 43, Issue 2, March 2006, Pages 204-221.
- [2] Perceived E-Readiness Factors in E-Commerce Adoption: An Empirical Investigation in a Developing Country Alemayehu Molla & Paul S. Licker. Pages 83-110 — Published online: 08 Dec 2014. <https://doi.org/10.1080/10864415.2005.11043963>.
- [3] Consumer Acceptance of Electronic Commerce: Integrating Trust and Risk with the Technology Acceptance Model, Paul A. Pavlou Pages 101-134 — Published online: 23 Dec 2014, <https://doi.org/10.1080/10864415.2003.11044275>.
- [4] Measuring e-Commerce Success: Applying the DeLone & McLean Information Systems Success Model, William H. DeLone & Ephraim R. McLean, Pages 31-47 Published online: 08 Dec 2014, Download citation - <https://doi.org/10.1080/10864415.2004.11044317>.
- [5] Introduction to the Special Issue Social Commerce: A Research Framework for Social Commerce., Ting-Peng Liang & Efraim Turban, Pages 5-14 — Published online: 10 Dec 2014, Download citation - <https://doi.org/10.2753/JEC1086-4415160201>.
- [6] A Study of the Factors that Influence the Acceptance of e-Commerce in Developing Countries: A Comparative Survey between Iran and United Arab Emirates. Lotfollah Forouzandeh Dehkordi, Ali Shahnazari, Ali Noroozi, *Interdisciplinary Journal of Research in Business*, Vol. 1, Issue. 6, June 2011(pp.44-49).
- [7] Wholesale And Retail E-Commerce In Mauritius: Views Of Customers And Employees, Tiruvenee Sawmy I and Adjnu Damar-Ladkoo, 1 University of Mauritius, DOI: <https://doi.org/10.1515/sbe-2015-0028>, Published online: 25 Sep 2015.
- [8] Gender-Based Differences in Consumer E-Commerce Adoption, Craig Van Slyke, France Belanger, Richard D Johnson, Ross Hightower, *Communications of the Association for Information Systems*, 26, pp-pp. <https://doi.org/10.17705/1CAIS.02602>.
- [9] Drivers and Inhibitors to E-commerce Adoption: Exploring the Rationality of Consumer Behavior in the Electronic Marketplace, Bill Anckar, Abo Akademi University, bill.ankarabo.f, <http://aisel.aisnet.org/ecis>, 2003.
- [10] The influence of the commercial features of the Internet on the adoption of e-commerce by consumers., Angel Herrero Crespo, Ignacio, Rodriguez del Bosque, *Electronics Commerce Research and Applications*, Volume 9, Issue 6, November-December 2010, Pages 562-575.
- [11] A Study on the Factors That Influence the Consumers Trust on Ecommerce Adoption, Yi Yi Thaw, Ahmad Kamil Mahmood, P. Dhanapal Durai Dominic, *International Journal of Computer Science and Information Security*, IJCSIS, Vol. 4, No. 1 & 2, August 2009, USA.
- [12] A cross-cultural investigation of consumer e-shopping adoption, Jayoung Choi, Loren V Geistfeld, *Journal of Economic Psychology*, Volume 25, Issue 6, December 2004, Pages 821 - 838.
- [13] An empirical study of product differences in consumers' E-commerce adoption behavior, Xiao Liu, Kwok Kee Wei, *Electronic Commerce Research and Applications*, Volume 2, Issue 3, Autumn 2003, Pages 229-239, [https://doi.org/10.1016/S1567-4223\(03\)00027-9](https://doi.org/10.1016/S1567-4223(03)00027-9).
- [14] Understanding and Predicting Electronic Commerce Adoption: An Extension of the Theory of Planned Behavior, Paul A. Pavlou and Mendel Fyngenson, *Management Information Systems Research Center, University of Minnesota*, Vol. 30, No. 1 (Mar., 2006), pp. 115-143 (29 pages), DOI: 10.2307/25148720, <https://www.jstor.org/stable/25148720>.
- [15] Barriers to E-Commerce Adoption: Consumers' Perspectives from a Developing Country, Moudi Almousa, Department of Food Science and Nutrition, King Saud University, Riyadh, Saudi Arabia., *iBusiness (Scientific Research Open Access)*, Vol.5 No.2(2013), Article ID:33744,7 pages DOI:10.4236/ib.2013.52008.
- [16] Assessing the effects of consumers' product evaluations and trust on repurchase intention in e-commerce environments, Yulia W Sullivan, Dan J Kim, *International Journal of Information Management*, Volume 39, April 2018, Pages 199-219, <https://doi.org/10.1016/j.ijinfomgt.2017.12.008>
- [17] E-WOM from e-commerce websites and social media: Which will consumers adopt? Qiang Yan, Shuang Wu, Lingli Wang, Pengfei Fu, Hejie Chen, Guohong Wei, *Electronics Commerce and Research Applications*, Volume 17, May-June 2016, Pages 62-73, <https://doi.org/10.1016/j.elerap.2016.03.004>
- [18] The Influence of Culture on Consumer-Oriented Electronic Commerce Adoption, C. Slyke, Hao Lou, V. Sridhar, *Journal of Electronic Commerce Research*, Published 2004, Corpus ID: 5877469
- [19] The Enablers and Disablers of E-Commerce: Consumers' Perspectives, Mohammed A Alqahtani, Ali H Al Badi, Pam J Mayhew, *The Electronic Journal of Information Systems in Developing Countries.*, December 2017, <https://doi.org/10.1002/j.1681-4835.2012.tb00380.x>
- [20] Anckar, Bill and Walden, Pirkko, "Factors Affecting Consumer Adoption Decisions and Intents in Mobile Commerce: Empirical Insights" (2003). BLED 2003 Proceedings. 28. <http://aisel.aisnet.org/bled2003/28>
- [21] Is Online Consumers' Impulsive Buying Beneficial for E-Commerce Companies? An Empirical Investigation of Online Consumers' Past Impulsive Buying Behaviors. Se Hun Lim, Sukho Lee & Dan J Ki., *Information Systems Management*, Volume 34, 2017, Issue 1, Pages 85-100, <https://doi.org/10.1080/10580530.2017.1254458>
- [22] Trait Predictors of Online Impulsive Buying Tendency: A Hierarchical Approach., Tao Sun, Guo Hua Wu, *Journal of Marketing Theory & Practice*, Volume 19, 2011, Issue 3, Pages 337-346, Dec 2014. <https://doi.org/10.2753/MTP1069-6679190307>
- [23] Personality and impulsive buying behaviors. A necessary condition analysis., Asad Shahjehan, Javeria Andleeb Qureshi., *Economic Research*, Volume 32, 2019, Issue 1, Pages 1060-1072, <https://doi.org/10.1080/1331677X.2019.1585268>
- [24] Application of the Stimulus-Organism-Response model to the retail environment: the role of hedonic motivation in impulse buying



- behavior., Hyo-Jung Chang, Molly Eckman & Ruoh-Nan Yan, The International Review of Retail, Distribution and Consumer Research, Pages 233-249, 2011, <https://doi.org/10.1080/09593969.2011.578798>
- [25] What factors determine e-satisfaction and consumer spending in e-commerce retailing? Tahir M Nisar., Guru Prabhakar, Journal of Retailing and Consumer Services, Volume 39, November 2017, Pages 135-144, <https://doi.org/10.1016/j.jretconser.2017.07.010>
- [26] Knowledge Management Mechanisms in E-Commerce: A Study of Online Retailing and Auction Sites., Fiona Nah, Keng Siau, Yuhong Tian & Min Ling., Journal of Computer Information Systems, Volume 42, 2002, Page 119-128, Issue 5 – Special Issue on Knowledge Management in eCommerce.,
- [27] Consumer buying behavior towards online shopping: An empirical study on Dhaka city, Bangladesh., Mohammad Anisur Rahman., Md. Aminul Islam, Bushra Humyra Esha, Nahida Sultana & Sujan Chakravorty., Andreea Molnar (Reviewing Editor)., Journal Cogent Business and Management., Volume 5, 2018 – Issue 1., Article 1514940,
- [28] An Empirical Study on the Factors Affecting Online Shopping Behavior of Millennial Consumers., Arunkumar Sivakumar, Abirami Gunasekaran., Journal of Internet Commerce., Volume 16, 2017, Issue -3 , Pages 219-230. (Google Scholar)
- [29] Antecedents of Online Shopping Behavior in India: An Examination., Arpita Khare., Sapna Rakesh., Journal of Internet Commerce, Volume 10, 2011, Issue-4., Pages 227-244., <https://doi.org/10.1080/15332861.2011.622691> (Google Scholar)
- [30] Hedonic Tendencies and the Online Consumer: An Investigation of the Online Shopping Process., SoJung Kim, Matthew S Eastin., Journal of Internet Commerce, Volume 10, 2011, Issue -1, Pages 68-90., <https://doi.org/10.1080/15332861.2011.558458>
- [31] Online shopping: Factors that affect consumer purchasing behavior., Jozef Bucko, Lucas kakalejcik & Martina Ferencova, Len Tiu Wright (Reviewing Editor)., Journal Cogent Business & Management, Volume 5, 2018, Issue – 1, Article 1535751, 2018,
- [32] FACTORS INFLUENCING CONSUMERS' ATTITUDE TOWARDS E-COMMERCE PURCHASES THROUGH ONLINE SHOPPING., Zuroni Md Jusoh, Goh Hai Ling., International Journal of Humanities and Social Sciences, Vol 2, No 4 (Special Issue Feb 2012)
- [33] Understanding online purchase intentions: contributions from technology and trust perspectives., Hans van der Heijden , Tibert Verhagen & Marcel Creemers., European Journal of Information Systems., Volume 12, 2003, Issue 1, Pages 41-48, 2017, <https://doi.org/10.1057/palgrave.ejis.3000445>
- [34] Park, C., & Kim, Y. (2003). Identifying key factors affecting consumer purchase behavior in an online shopping context. International Journal of Retail & Distribution Management, ISSN 0959-0552, Emerald Insights, 31(1), 16–29. doi:10.1108/09590550310457818 [Crossref], [Google Scholar]
- [35] Mudambi, S. M., & Schuff, D. (2010). What makes a helpful online review? A study of customer reviews on Amazon.com. MIS Quarterly, 34(1), 185–200. doi:10.2307/20721420 [Crossref], [Web of Science @], [Google Scholar]
- [36] Katawetawarakas, C., & Wang, C. L. (2011). Online shopper behavior: Influences of online shopping decision. Asian Journal of Business Research, 1(2). doi:10.14707/ajbr.112 [Crossref], [Google Scholar]
- [37] Lee, G., & Lin, H. (2005). Customer perceptions of e-service quality in online shopping. International Journal of Retail & Distribution Management, ISSN: 0959-0552, 33(2), 161-176. doi:10.1108/09590550510581485 [Crossref], [Google Scholar]
- [38] The Analysis of E-service Quality, Customer Trust, Perceived Value, and Behavioral Intention on Online Transportation in Surabaya., Aninda Selviana Putrianti, Hatane Samuel, International Journal of Business Studies., Vol No 1, 2018, <https://doi.org/10.9744/ijbs.1.1.1-10>
- [39] Demangeot, C., & Broderick, A. J. (2010). Consumer perceptions of online shopping environments. Psychology & Marketing, 30(6), 461–469. doi:10.1002/mar [Crossref], [Google Scholar]
- [40] Constantinides, E. (2004). Influencing the online consumer's behavior: The web experience. Internet Research, 14(2), 111–126. doi:10.1108/10662240410530835 [Crossref], [Web of Science @], [Google Scholar]
- [41] Chen, Y., & Barnes, S. (2007). Initial trust and online buyer behavior. Industrial Management & Data Systems, 107(1), 21–36. doi:10.1108/02635570710719034 [Crossref], [Web of Science @], [Google Scholar]
- [42] The Impact of Online Social Networks on Decision Support Systems, Francisco Antunes, João Paulo Costa., Conference paper – from information to smart society, pp-75 to 85, 2014
- [43] Alsubagh, H. (2015). The impact of social networks on consumers' behaviors background of the study. International Journal of Business and Social Science, 6(1), 2219–6021. doi:10.1007/978-3-319-09450-2_7 [Crossref], [Google Scholar]
- [44] Al-Debei, M. M., Akroush, M. N., & Ashouri, M. I. (2015). Consumer attitudes towards online shopping. Internet Research, 25(5), 707–733. doi:10.1108/IntR-05-2014-0146 [Crossref], [Web of Science @], [Google Scholar]
- [45] Agyapong, H. A. (2017). Exploring the influential factors of online purchase (Thesis). Vaasan Ammattikorkeakoulu University of Applied Sciences, Business Economics and Tourism International Business, Finland, 45pages + 6 Appendices. [Google Scholar]
- [46] Agarwal, J., & Wu, T. (2015). Factors influencing growth potential of e-commerce in emerging economies: An institution based N-OLI framework and research propositions. Thunderbird International Business Review, 57(3), 197-215. Wiley Online Library. doi:10.1002/tie.2015.57.issue-3 [Crossref], [Web of Science], [Google Scholar]
- [47] Downing, C. E., & Liu, C. (2014). Assessing web site usability in retail electronic commerce. Journal of International Technology and Information Management, 23(1), 27-40. [Google Scholar]
- [48] Lian, J.-W., & Yen, D. C. (2014). Online shopping drivers and barriers for older adults: Age and gender differences. Computers in Human Behavior, 37, 133–143. doi:10.1016/j.chb.2014.04.028 [Crossref], [Web of Science @], [Google Scholar]
- [49] Pappas, I. O., Kourouthanassis, P. E., Giannakos, M. N., & Lekakos, G. (2016). The interplay of online shopping motivations and experiential factors on personalized e-commerce: A complexity theory approach. Telematics and Informatics, 34(5),



- 730–742. doi:10.1016/j.tele.2016.08.021 [Crossref], [Web of Science ®], [Google Scholar]
- [50] Rajyalakshmi, N. (2015). Factors influencing online shopping behavior of urban consumers in India. *International Journal of Online Marketing*, 5(1), 38–50. doi:10.4018/IJOM.2015010103 [Crossref], [Web of Science ®], [Google Scholar]
- [51] Štefko, R., Dorčák, P., & Pollák, F. (2011). Shopping on the internet from the point of view of customers. *Polish Journal of Management Studies*, 4(1), 214–222. [Google Scholar]
- [52] Tekin, M., İnce, H., Etlioğlu, M., Koyuncuoğlu, Ö., & Tekin, E. (2018). A study about affecting factors of development of e-commerce. In N. Durakbasa & M. Gencyilmaz (eds) *Proceedings of the International Symposium for Production Research 2018*. ISPR 2018. Cham: Springer. [Google Scholar]
- [53] Wang, E. S. T., & Chou, N. P. Y. (2014). Consumer characteristics, social influence, and system factors on online group-buying repurchasing intention. *Journal of Electronic Commerce Research*, 5(2), 119–132. [Google Scholar]
- [54] Determinants of online shopping among tertiary students in Ghana: An extended technology acceptance model., Daniel Ofori, Christina Appiah-Nimo, Len Tiu Wright (Reviewing Editor), *Journal Cogent Business and Management*, Volume 6, 2019, Issue-1, Article 1644715
- [55] Aghekyan-Simonian, M., Forsythe, S., Kwon, W. S., & Chattaraman, V. (2012). The role of product brand and online store image on perceived risks and online purchase intentions for apparel. *Journal of Retailing and Consumer Services*, 19(3), 325–20. doi:10.1016/j.jretconser.2012.03.006 [Crossref], [Google Scholar]
- [56] Aragoncillo, L., & Orus, C. (2018). Impulse buying behaviour: An online-offline comparative and the impact of social media. *Spanish Journal of Marketing - ESIC*, 22(1), 42–62. doi:10.1108/SJME-03-2018-007 [Crossref], [Google Scholar]
- [57] Ariff, M. S. M., Yan, N. S., Zakuan, N., Bahari, A. Z., & Jusoh, A. (2013). Web-based factors affecting online purchasing behaviour. *IOP Conference Series: Materials Science and Engineering*, 46(1), 012038. IOP Publishing. doi:10.1088/1757-899X/46/1/012038 [Crossref], [Google Scholar]
- [58] Beauchamp, M. B., & Ponder, N. (2010). Perceptions of retail convenience for in-store and online shoppers. *The Marketing Management Journal*, 20(01), 49–65. [Google Scholar]
- [59] Chang, H., & Wang, H. W. (2011). The moderating effect of customer perceived value on online shopping behaviour. *Online Information Review*, 35(3), 333–359. doi:10.1108/14684521111151414 [Crossref], [Web of Science ®], [Google Scholar]
- [60] Chawla, M., Khan, M. N., & Pandey, A. (2015). Internet usage and online shopping: Differences based on gender of students. *International Journal of Engineering Technology, Management and Applied Sciences*, 3(1), 75–81. [Google Scholar]
- [61] Chellappa, R. K., & Pavlou, P. A. (2002). Perceived information security, financial liability and consumer trust in electronic commerce transactions. *Logistics Information Management*, 15(5/6), 358–368. doi:10.1108/09576050210447046 [Crossref], [Google Scholar]
- [62] Chen, Y. H., Hsu, I. C., & Lin, C. C. (2010). Website attributes that increase consumer purchase intention: A con-joint analysis. *Journal of Business Research*, 63, 1007–1014. doi:10.1016/j.jbusres.2009.01.023 [Crossref], [Web of Science ®], [Google Scholar]
- [63] Chiou, J. S., & Pan, L. Y. (2009). Antecedents of internet retailing loyalty: Differences between heavy versus light shoppers. *Journal of Business and Psychology*, 24(3), 327. doi:10.1007/s10869-009-9111-7 [Crossref], [Web of Science ®], [Google Scholar]
- [64] Choudhury, D., & Dey, A. (2014). Online shopping attitude among the youth: A study on University students. *International Journal of Entrepreneurship and Development Studies*, 2(1), 23–32. [Google Scholar]
- [65] Dai, B., Forsythe, S., & Kwon, W. S. (2014). The impact of online shopping experience on risk perceptions and online purchase intentions: Does product category matter? *Journal of Electronic Commerce Research*, 15(1), 13–24. [Web of Science ®], [Google Scholar]
- [66] Delafrooz, N., Paim, H. L., & Khatibi, A. (2010). Students' online shopping behavior: An empirical study. *Journal of American Science*, 6(1), 137–147. [Google Scholar]
- [67] Deneen, K., & Yu, D. (2018, March 17). Online shopping is making many customers antagonistic. Gallup. Retrieved from <https://news.gallup.com/businessjournal/182006/online-shopping-making-customers-antagonistic.aspx> [Google Scholar]
- [68] Featherman, M. S., Valacich, J. S., & Wells, J. D. (2006). Is that authentic or artificial? Understanding consumer perceptions of risk in e-service encounters. *Information Systems Journal*, 16(2), 107–134. doi:10.1111/isj.2006.16.issue-2 [Crossref], [Web of Science ®], [Google Scholar]
- [69] Gao, L. (2015). Understanding consumer online shopping behaviour from the perspective of transaction costs (Doctoral dissertation). University of Tasmania. [Google Scholar]
- [70] Gong, W., Stump, R. L., & Maddox, L. M. (2013). Factors influencing consumers' online shopping in China. *Journal of Asia Business Studies*, 7(3), 214–230. doi:10.1108/JABS-02-2013-0006 [Crossref], [Google Scholar]
- [71] Gozukara, E., Ozyer, Y., & Kocoglu, I. (2014). The moderating effects of perceived use and perceived risk in online shopping. *Journal of Global Strategic Management*, 16, 67–81. doi:10.20460/JGSM.2014815643 [Crossref], [Google Scholar]
- [72] Heijden, H. V. D., Verhagen, T., & Creemers, M. (2003). Understanding online purchase intentions: Contributions from technology and trust perspectives. *European Journal of Information Systems*, 12(1), 41–48. doi:10.1057/palgrave.ejis.3000445 [Taylor & Francis Online], [Web of Science ®], [Google Scholar]
- [73] Hsieh, J. Y., & Liao, P. W. (2011). Antecedents and moderators of online shopping behavior in undergraduate students. *Social Behavior and Personality: an International Journal*, 39(9), 1271–1280. doi:10.2224/sbp.2011.39.9.1271 [Crossref], [Web of Science ®], [Google Scholar]
- [74] Hsu, M. H., Yen, C. H., Chiu, C. M., & Chang, C. M. (2006). A longitudinal investigation of continued online shopping behavior: An extension of the theory of planned behavior. *International Journal of Human-Computer Studies*, 64(9), 889–904. doi:10.1016/j.ijhcs.2006.04.004 [Crossref], [Web of Science ®], [Google Scholar]



- [75] Kim, E. , & Hong, T. (2010). Segmentation customers in online stores from factors that affect the customer's intention to purchase. In 2010 International Conference on Information Society (pp. 383–388). IEEE. [Google Scholar]
- [76] Kim, H. , & Song, J. (2010). The quality of word-of mouth in the online shopping mall. *Journal of Research in Interactive Marketing* , 4(4), 376–390. doi:10.1108/17505931011092844 [Crossref], [Google Scholar]
- [77] Kumar, V. , Anand, P. , & Mutha, D. (2016, February 12). A study on trust in online shopping in Pune: A comparative study between male and female shoppers . Prerna and Mutha, Devendra. [Google Scholar]
- [78] Kwon, W. , & Lennon, S. (2009). What induces online loyalty? Online versus offline brand images. *Journal of Business Research* , 62(1), 557–564. doi:10.1016/j.jbusres.2008.06.015 [Crossref], [Google Scholar]
- [79] Li, N. , & Zhang, P. (2002). Consumer online shopping attitudes and behaviour: An assessment of research. In *Proceedings of the Americas Conference on Information Systems (AMCIS'2002)*, (pp. 9–11). [Google Scholar]
- [80] Mandhlazi, L. , Dhurup, M. , & Mafini, C. (2013). Generation Y consumer shopping styles: Evidence from South Africa. *Mediterranean Journal of Social Sciences* , 4(14), 153. [Google Scholar]
- [81] Ovčjak, B. , Heričko, M. , & Polančič, G. (2015). Factors impacting the acceptance of mobile data services—A systematic literature review. *Computers in Human Behavior* , 53, 24–47. doi:10.1016/j.chb.2015.06.013 [Crossref], [Web of Science ®], [Google Scholar]
- [82] Park, C. H. , & Kim, Y. G. (2003). Identifying key factors affecting consumer purchase behaviour in an online shopping context. *International Journal of Retail & Distribution Management* , 31(1), 16–29. doi:10.1108/09590550310457818 [Crossref], [Google Scholar]
- [83] Venkatesh, V. , Morris, M. G. , Davis, G. B. , & Davis, F. D. (2003). User acceptance of information technology: A unified view. *MIS Quarterly* , 27(3), 425–478. doi:10.2307/30036540 [Crossref], [Web of Science ®], [Google Scholar]
- [84] Wang, Y. S. , Lin, H. H. , & Luarn, P. (2006). Predicting consumer intention to use mobile service. *Information Systems Journal* , 16(2), 157–179. doi:10.1111/j.1365-2575.2006.00213.x [Crossref], [Web of Science ®], [Google Scholar]
- [85] Wu, J. H. , & Wang, S. C. (2005). What drives mobile commerce? An empirical evaluation of the revised technology acceptance model. *Information & Management* , 42(5), 719–729. doi:10.1016/j.im.2004.07.001 [Crossref], [Web of Science ®], [Google Scholar]
- [86] Wu, L. Y. , Chen, K. Y. , Chen, P. Y. , & Cheng, S. L. (2014). Perceived value, transaction cost, and repurchase intention in online shopping: A relational exchange perspective. *Journal of Business Research* , 67(1), 2768–2776. doi:10.1016/j.jbusres.2012.09.007 [Crossref], [Web of Science ®], [Google Scholar]
- [87] Wu, P. C. , Yeh, G. Y. Y. , & Hsiao, C. R. (2011). The effect of store image and service quality on brand image and purchase intention for private label brands. *Australasian Marketing Journal (AMJ)* , 19(1), 30–39. doi:10.1016/j.ausmj.2010.11.001 [Crossref], [Google Scholar]
- [88] 68 Useful eCommerce Statistics You Must Know in 2021 (wp-forms.com)
- [89] Shandilya R, Mathur N, Kalyani S; The influence of personality traits on digital quotient: An Indian metro city perspective; *International Journal of Computing and Digital Systems* ISSN (2210-142X) *Int. J. Com. Dig. Sys.* 11, No.1 (Mar-2022)
- [90] <https://www.ibef.org/download/e-commerce-dec-2018.pdf>
- [91] https://www.oecd-ilibrary.org/science-and-technology/an-introduction-to-online-platforms-and-their-role-in-the-digital-transformation_19e6a0f0-en. <https://doi.org/10.1787/19e6a0f0-en>
- [92] Sahar A. El Rahman1,2, Naglaa F. Soliman2, Evaluation of E-Commerce Web-Based Systems, *International Journal of Computing and Digital Systems* ISSN (2210-142X) *Int. J. Com. Dig. Sys.* 5, No.6 (Nov-2016), <http://dx.doi.org/10.12785/ijcds/050605>
- [93] He, Xiaoxiangyu1 and Dr. Humayun Bakht1, An Analysis of Administrative Management, Financial and Security Barriers in E-Commerce Adoption in Small to Medium Size Enterprises (SME's) in the United Kingdom, *International Journal of Computing and Digital Systems* ISSN (2210-142X) *Int. J. Com. Dig. Sys.* 7, No.6 (Nov-2018), <http://dx.doi.org/10.12785/ijcds/070602>
- [94] Ajantha Herath1 Yousif Al-Bastaki2 and Suvineetha Herath3, Task based Interdisciplinary E-Commerce Course with UML Sequence Diagrams, Algorithm Transformations and Spatial Circuits to Boost Learning Information Security Concepts, *International Journal of Computing and Digital Systems*, *Int. J. Com. Dig. Sys.* 2, No. 2, 79-87(2013), <http://dx.doi.org/10.12785/ijcds/020204>
- [95] Manos Tsagkias and Tracy King, Surya Kallumadi, Vanessa Murdock, Maarten Rijke; Challenges and research opportunities in eCommerce search and recommendations; *ACM SIGIR Forum* Volume 54 Issue 1 June 2020 Article No.: 2pp 1–23 <https://doi.org/10.1145/3451964.3451966>
- [96] Soni, Vishal Dineshkumar, Emerging Roles of Artificial Intelligence in Ecommerce (July 11, 2020). *International Journal of Trend in Scientific Research and Development — Volume 4 — Issue 5 — August 2020 — pp.223-225*, Available at SSRN: <https://ssrn.com/abstract=3648698>.
- [97] Nur Azimah bt Mohd, Zarul Fitri Zaaba, A Review of Usability and Security Evaluation Model of Ecommerce Website, *Procedia Computer Science*, Volume 161, 2019, Pages 1199-1205, ISSN 1877-0509, <https://doi.org/10.1016/j.procs.2019.11.233>.
- [98] Jílková, P., Králová, P. Digital Consumer Behaviour and e-commerce Trends during the COVID-19 Crisis. *Int Adv Econ Res* 27, 83–85 (2021). <https://doi.org/10.1007/s11294-021-09817-4>
- [99] Anika Nissen, Caspar Krampe, Why he buys it and she doesn't – Exploring self-reported and neural gender differences in the perception of eCommerce websites, *Computers in Human Behavior*, Volume 121, 2021, 106809, ISSN 0747-5632, <https://doi.org/10.1016/j.chb.2021.106809>.
- [100] Honghao Gao, Wanqiu Huang, Yucong Duan, Thee cloud edge based dynamic reconfiguration to service workflow for mobile ecommerce environments: A QoS Prediction Perspective; <https://dl.acm.org/toc/toit/2021/21/1>
- [101] Andrés Muñoz-Villamizar, Josué C. Velázquez-Martínez, Perla Haro, Ana Ferrer, Roger Mariño, The environmental impact of fast

shipping ecommerce in inbound logistics operations: A case study in Mexico, *Journal of Cleaner Production*, Volume 283, 2021, 125400, ISSN 0959-6526, <https://doi.org/10.1016/j.jclepro.2020.125400>.

- [102] Wee-Kheng Tan, Bo-Hsiang Chen, Enhancing subscription-based ecommerce services through gambled price discounts, *Journal of Retailing and Consumer Services*, Volume 61, 2021, 102525, ISSN 0969-6989, <https://doi.org/10.1016/j.jretconser.2021.102525>.
- [103] Lynne Bell, Rachel McCloy, Laurie Butler, Julia Vogt; Motivational and Affective Factors Underlying Consumer Dropout and Transactional Success in eCommerce: An Overview; *Front. Psycho l.*, 03 July 2020. <https://doi.org/10.3389/fpsyg.2020.01546>
- [104] Teresa Garín-Muñoz, Rafael López, Teodosio Pérez-Amaral, Iñigo Herguera, Angel Valarezo, Models for individual adoption of eCommerce, eBanking and eGovernment in Spain, *Telecommunications Policy*, Volume 43, Issue 1, 2019, Pages 100-111, ISSN 0308-5961, <https://doi.org/10.1016/j.telpol.2018.01.002>.
- [105] Swagato Chatterjee, Divesh Goyal, Atul Prakash, Jiwan Sharma, Exploring healthcare/health-product ecommerce satisfaction: A text mining and machine learning application, *Journal of Business Research*, Volume 131, 2021, Pages 815-825, ISSN 0148-2963, <https://doi.org/10.1016/j.jbusres.2020.10.043>.
- [106] Vaibhav S. Diwanji, Juliann Cortese, Contrasting user generated videos versus brand generated videos in ecommerce, *Journal of Retailing and Consumer Services*, Volume 54, 2020, 102024, ISSN 0969-6989, <https://doi.org/10.1016/j.jretconser.2019.102024>.
- [107] Emi Moriuchi; The impact of country of origin on consumer's pricing judgements in ecommerce settings; *International Marketing Review*, ISSN 0265-1335; April 2, 2021
- [108] Guoguang Liu, An ecommerce recommendation algorithm based on link prediction, *Alexandria Engineering Journal*, Volume 61, Issue 1, 2022, Pages 905-910, ISSN 1110-0168, <https://doi.org/10.1016/j.aej.2021.04.081>.
- [109] Xaiang T.R. Kong, Xuan Yang, K.L. Peng, Clyde Zhengdao Li, Cyber physical system-enabled synchronization mechanism for pick-and-sort ecommerce order fulfilment, *Computers in Industry*, Volume 118, 2020, 103220, ISSN 0166-3615, <https://doi.org/10.1016/j.compind.2020.103220>.
- [110] [110] M. Li, H. Wu and H. Zhang, "Matrix Factorization for Personalized Recommendation With Implicit Feedback and Temporal Information in Social Ecommerce Networks," in *IEEE Access*, vol.7, pp. 141268-141276, 2019, doi: 10.1109/ACCESS.2019.2943959.



Rahul Shandilya brings in 28+ years of tech industry experience across visioning, execution and governance of ITS and Digital strategy across business value chain. Has been demonstrated business and tech leader being erstwhile CEO of Mahindra eMarkets Ltd and various CxO positions in last 12 years. An avid technologist and consultant in his career, he has worked globally in Automotive, Aerospace, Heavy Engineering

Industry, retail products, textile and eCommerce. He is objective, warm, pleasing and possess high energy. He is a graduate from IIT Roorkee and has pursued higher education in the space of business management, psychology and physics. His interest beyond profession and academics includes wild life and sports.



Dr. Neeti Mathur is MBA in Finance from FMS College of Mohan Lal Sukhadiya University, Udaipur (Rajasthan) and Ph.D. from Janardan Rai Nagar Rajasthan Vidyapeeth University, Udaipur (Rajasthan) in accounting. She is also a qualified Company Secretary (ICSI) and Certified Management Accountant (ICMAI). She is NET-JRF from UGC in Management. She is C.A. Inter from Institute of Chartered Accountant of India.

Her area of research is Microfinance, financial inclusions and self-help groups. She wrote eight research papers in journals of National and International repute. Dr. Mathur brings with her 8 years of experience of teaching subjects, like Management Accounting, Financial Accounting, Strategic Cost Management, Security Analysis & Investment Management and Financial Management. Before joining NIIT she was associated with Adamas University, Kolkata as Assistant Professor where she was teaching Finance and Accounting subjects. She has also worked as Assistant Professor in Faculty of Management Studies in Janardan Rai Nagar Rajasthan Vidyapeeth University, Udaipur.



Dr. Sushil Kalyani has earned his Ph.D in Accounting & Finance from the Department of Accounting and Business Statistics, University of Rajasthan. He has done his PGCPF from IIM Indore and has done MBA in Finance, MA in Business Economics, PG Diploma in Foreign Trade, PG Diploma in Financial Management, CA (Inter), ICAI's Accounting Technician Certificate Program and has qualified UGC NET (Management).

In his overall experience of 19 years in academics and corporate, he has worked with various institutes including IMI - Bhubaneswar and IIS University Jaipur. In his stint with corporate world, he worked with a Dubai based company in the capacity of Regional Financial Controller and has handled 25 branches of the company situated in African continent. His teaching interests are Financial Reporting and Analysis, Management Accounting and Control, Project Finance, Financial Derivatives, Risk Management, Financial Modeling and Valuation, Wealth, etc.