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CONSUMER ADOPTION OF MOBILE SHOPPING APPLICATIONS: EMPIRICAL EVIDENCE FROM INDIA

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Abstract:
Purpose: This study aims to investigate the factors influencing consumers' intention to use mobile shopping applications in India by applying a well-established technology acceptance model (TAM) as a theoretical framework.
Design / methodology / approach: The study sample comprises 205 respondents with a response rate of 82 percent. To test the hypothesis, analysis of a moment structures (AMOS) was performed on the data using CFA and SEM.
Findings: The findings of this study revealed that personal innovativeness emerged as a significant determinant of consumers' adoption of m-shopping applications in India. Moreover, perceived usefulness and perceived ease of use are additional factors that are positively correlated with their adoption.However, perceived risk does not have a substantial effect on Indian consumers' intention to use m-shopping applications.
Practical implications: From a practical standpoint, this research would support app developers and online retailers in their efforts to persuade consumers to try and stick with their mobile shopping apps. Additionally, it helps researchers and academicians to have a deeper understanding of the various factors that influence consumers' intention towards the use of mobile shopping applications.
Research limitation: The findings of this study have limited generalizability because it focuses solely on India.
Originality / value: This study made a substantial contribution by elucidating the factors that can influence the adoption of mobile shopping applications. The present study has effectively extended the TAM to encompass m-shopping applications through the integration of personal innovativeness. Extended TAM offers a more comprehensive understanding of consumers' adoption of m-shopping applications in India.

Keywords: India, m-Shopping App, Personal Innovativeness, Perceived Usefulness, SEM

1. Introduction

With the fast development mobile commerce and e-commerce the NFC"Near Field Communication"playing important role (Ondrus and Pigneur, 2007) and with the substantial using of m-commerce has excessively change the real picture of customer's service because its shows that customers are hugely using mobile commerce and e-commerce facilities for online shopping. mobile payment system have not limited till time and place so it has changed traditional system like cash on delivery, debit and credit card etc. (Shao et al., 2019). In 2018, the frequency of using m-commerce was 938.2 million and two - third of these are from china and India and then after USA (eMarketer, 2018). In western countries, people have not hugely used mobile payment system in comparison with India and china (Lie'bana-Cabanillas et al., 2018a, b). The influence of several factors on the propensity to use a mobile wallet is the primary cause of the variations in the frequency of mobile payment system usage among nations.

With the using of mobile commerce, everyone can purchase and sales goods with mobile application and accessing wireless internet services.Any online purchase made using a mobile device is referred to as mobile commerce.M-commerce provides several benefits like ease of access, usability, fast transactions, lower costs and higher productivity, discount scheme and safety. India is ready for accepting new digital payment technology with the better deals and cash backs (Shah et al., 2016). They also said that Indian customers already started to use electronic payment system with the offline sales but habit of using cash and complexity of internet services were main obstacle for digital payment system.

In India, 92 percent transaction happening with cash only so can we imagine that cashless transaction will be possible in India and another country? when November 8, 2016 the Indian

government removed using 500 and 1000 currency notes so at that time withdrawing 86 percent of the nation's physical currency in one night, to be substituted with new currency within a two-month period (Chodorow-Reich et al., 2019). Main object behind this news that how to control black money and control of fake Indian currency notes. After this situation, consumers from different states and areas started to use mobile payment services and m-banking for transaction also. The outcome of this phenomenon that every India users towards push to adoption of m-commerce and e-commerce. So all the consumers need to adopt about various digital payment system like G-pay, mobile pay and any digital payment system after tremendous event because it's demand of timing. There is no any intention to push only on mobile payment system after this event but new technology time forced that have to use new payment system services. So it is necessary to check that this is unintentional forced adoption of mobile wallet or it is just arrangement for this distressed time? To ascertain the response to this question, February 2017, for this research collected data with the survey method from Indian customer and for this research extended UTAUT model have been used.

'Roberts et al., 2007a, b; Sun and Fang, 2010; Oredo and Njihia, 2015' indicate that mindfulness is important thing to adopt new technology and it suggest that new information and new ideas which make it clear decision about alternative options. Mindfulness connected to innovative behaviours, performance depends on individual behaviour and ability because the word of thinking is important for new different situations (Oredo and Njihia , 2015). Technology is influenced from mindfulness according to Sun et al., 2016; facilities of using m-commerce have been changed with the new technology whether customers will use or not its depend on their perceptions. The new technology can be mindless, consumers try to search out information about new technology as per their needs and as per others opinion (Sun and Fang, 2010).

Indian Government has taken astounding decision in the year 2016 of demonetization. All classes and age groups life and whole Indian economy have affected from this astounding decision. People had to use m-payment (it is using for online transactions through mobile) for any transactions due to inconsistent commotion which was earlier people were using cash only. Before this situation, 98 consumers were using on cash payment mode for transactions but after this situation online transaction have been increased in India. Mobile payment system is useful technology so through online payment system people can use it anywhere and anytime for payment of goods and services. As per reports of Mckinsey that M-commerce includes e-wallet, mobile payment and SMS-based payment methods etc. E-wallet and mobile wallet are important source of m- payment system.

Many investigators have used "extended the UTAUT model" with different variable in different mobile commerce researches. Several factors have been resulted in to extended UTAUT models for resulting of mobile payment research. However, most of past research has focused on mobile learning adoption with its factors. So those same factors have been varied one research to another research. As per few researches, extended UTAUT model is necessary for using of mobile payment system. Many variables are same in various literatures so those same factors which should include in research model for achieving significant results in mobile payment system.

2. Review of Literature

2.1 Conceptual Research Framework

2.1.1 Perceived Usefulness (PU)

By structural model analysis, PU haspositive effect onsmartphone users to make purchases and collected 400 valid responses from French (SindaArebi and Joel Jallais, 2015). Jen-Her Wu and Shu-Ching Wang in 2004 have indicated that perceived usefulness have positively

influenced on IU and also PEOU has significant impact on PU by using TAM model with the survey of MC consumers.By using structural equation modeling (SEM) to gather data from 434 valid respondents with mobile banking experience, Shunbo Yuan et al. (2014) empirically demonstrated a favorable correlation between PU and IU, as well as a positive influence from PEOU. According to Tao Zhou in 2013, perceived usefulness significantly affected to purchase intention with taken 291 valid responses.

H_1: Perceived usefulness positively influences consumers' intention to use m-shopping apps.

2.1.2 Perceived Ease of Use (PEOU)

PEOU is fundamental construct for user acceptance according to Fred D. Davis in 1989 and collected 152 valid responses for this research. PEOU indirectly influenced on real use through intention to use (Jen-HerWu and Shu-ChingWang, 2005). IU and PU positive influenced from PEOU by accepting TAM and the TPB model with 202 valid responses according to Khalifa and Ning Shen in 2008. PEOUis significantly connected to intention to use m- shopping and PEOU influenced from perceived usefulness according to Aldás-Manzano et al. in 2009. PEOU supported to PU and satisfaction also proved by 'SindaAgrebi and JoëlJallais' in 2015. For this research they have taken 400 valid responses by confirmatory analysis.

H_2: Perceived ease of use positively influences consumers' intention to use m-shopping apps.

2.1.3 Personal Innovativeness (PI)

Those who are innovative typically embrace new ideas well before others do (Rogers, 1962). The ability of individuals to engage in innovative behavior equips them to handle risk more effectively (Rogers, 2005). When it comes to online banking implementation, social traits, expertise, and exposure to technology are some of the aspects that determine consumer innovativeness and set early adopters apart from late adopters (Rogers, 1962). Nevertheless, the pivotal characteristics of innovators revolve around their willingness to embrace new ideas, their ability to navigate uncertainties, and their propensity for taking risks (Rogers, 1962; Lee and Huddleston, 2006). This perspective is supported by prior research in different contexts. For instance, Nakata and Sivakumar (1996) found that innovative managers often exhibit a risk-taking behavior. Cox and Rich's (1964) study on Teleshopping revealed that an individual's capability to handle uncertainties diminishes their perception of risk. Furthermore, Manzano et al. (2009) and Thakur and Srivastava (2015) found for internet banking and online shopping, respectively, customer innovativeness has a direct and negative impact on perceived risk. Other studies have delved into this risk aspect concerning individual factors (Beldona et al., 2004; Nysveen, 2003).

H_3: Personal innovativeness positively influences consumers' intention to use m-shopping apps.

2.1.4 Perceived Risk (PR)

By applying meta-analysis, Liyi Zhang et al., in 2012 have studied on various construct like 'Perceived Behavioral Control (PBC)', 'Subjective Norm (SN)', 'Perceived Usefulness (PU)', 'Perceived Ease of Use (PEOU)', 'Innovativeness (INNO)', 'Compatibility (COMPA)', 'Perceived Cost (PC)' and 'Perceived Risk (PR)'. They have carried out from their research that behavioral intention negatively influenced from perceived risk. They have collected 266 valid responses for their research. In 2017, Yogesh K. Dwivedi et al. have carried out from their research that attitude and behavioral intention negatively influenced from Perceived risk with using extended technology acceptance model (TAM2). For this research they have taken 377 responses from Delhi, Pune and Mumbai; Bangalore and Patna, Siliguri, and Gangtok. With accepting Technology Acceptance, Model Mauricio S. Featherman, Paul A. Pavlou in (2003) have studied thatthe intention to utilize e-services has been negatively impacted by perceived risk, and 181 valid responses have been collected for

their study. With 'the technology acceptance model (TAM)' and 'theory of planned behavior (TPB) model', Ming-Chi Lee in 2003 studied on 'Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit' indicated that the intention to use online banking has been negatively impacted by perceived risk. 368 internet users have filled out questionnaire for this research.

H_4: Perceived risk negatively influences consumers' intention to use m-shopping apps.

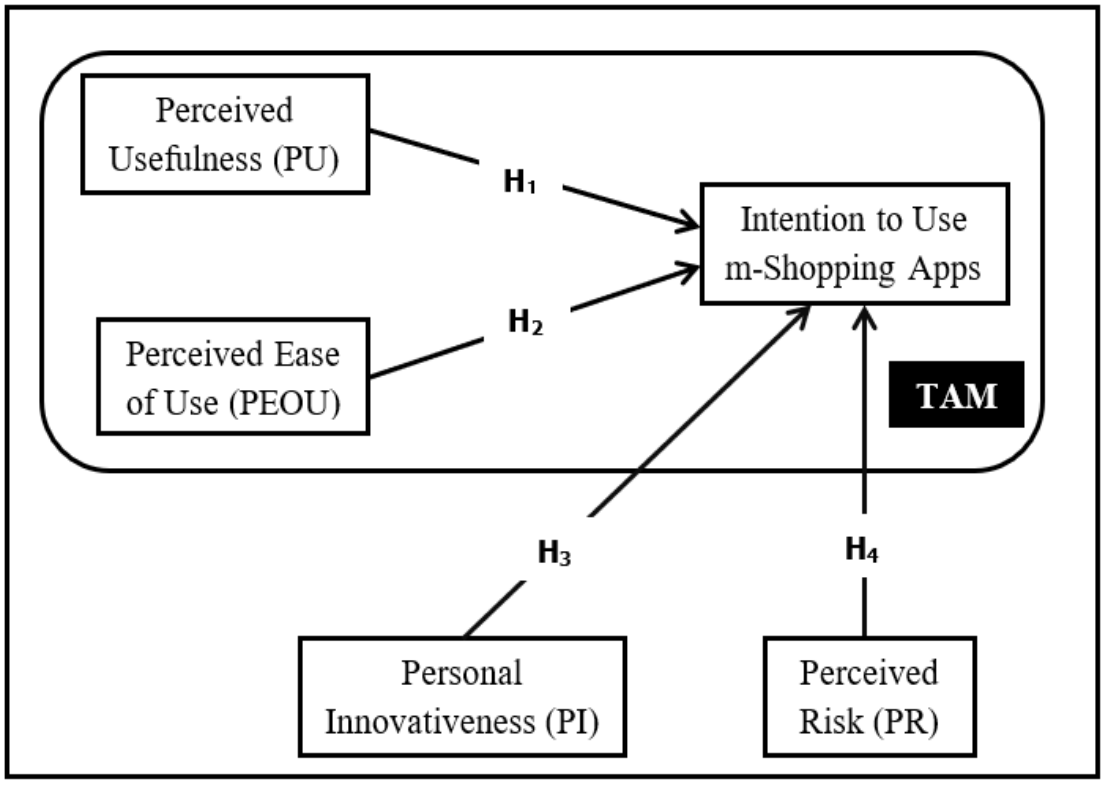

Figure I: Proposed Research Model for Consumers' Intention to use Mobile Shopping Applications in India

2.1.5 Intention to Use (IU)

Trust and PUplayed important role on Behavioral intention according to Zhou, T. and Lu, Y in 2011 with confirmatory factor analysis and collected valid responses by questionnaire survey in china. With the using ofTAM and SEM (Structural equation modeling), Alalwan el al. (2016) have carried out from their research that PEOU, PU and PR have significant effect on behavioural intention with convenience sampling they have collected data from Jordanian banking customers. Furthermore, behavioral intention influenced from Facilitating Conditions (Chen et. al 2013) with structural model and AMOS 19.0, 189 valid responses collected by formal questionnaire survey. According to Casey et al. (2012), behavioral intention have influenced from effort expectancy with UTAUTand PLS(partial least squares) modeling, they have collected 127 responses from Australia.

3. Methodological Approach

3.1 Objective of the Study

This research aims to investigate the factors influencing intention to use mobile shopping in India by utilizing the Technology Acceptance Model (TAM) as a theoretical framework.

3.2 Sampling and Data Collection

There were different variables that have taken for primary data collection and variables may have an effect on India mobile shopping users. The approach of using a questionnaire was used. The sample for this research is users who are using mobile application for online shopping.

3.3. Measurement Scales

The scale utilized in this study was derived from prior researches. The questionnaire for the study was composed of two sections: In section 1, respondents' demographic information is provided. In section 2, a scale comprising twenty-one items is presented to assess the participants' opinions on various aspects of m-shopping application. Each response was rated using a Likert scale that had the labels "Strongly Disagree (1)" and "Strongly Agree (5)". The sources of measurements scales for different constructs used in this study is given below:

Measurement Constructs with its Sources of Scales

Construct	No. of Statements	Sources of Scales
Perceived usefulness (PU)	4	Davis (1989)
Perceived ease of use (PEOU)	5	Davis (1989)
Perceived innovativeness (PI)	4	Goldsmith and Hofacker (1991), Agarwal and Prasad (1998)
Perceived risk (PR)	4	Featherman and Pavlou, 2003
Intentions to use (INT)	4	Kim et al. (2010)

3.4 Data Analytical Tools

Primary data collected for the current study were analyzed using two statistical softwares viz. SPSS version 20 and AMOS version 21. Different statistical tools viz. frequency, percentage, Cronbach's Alpha (α), CFA and SEM were applied as per the study's objective.

4. Data Analysis

4.1 Respondents' Demographics:

Table I provided a summary of the respondents' demographics. Out of 205 respondents, 63.90% were males (n = 131). The age group of 20-35 years comprised the majority of the samples (46.34%, n = 95). It was observed that the range of mobile purchasing application usage experience was between 1 to 2 years (n = 67, 32.68%).

Table I: Respondents' Demographics (n = 205)

Demographic Variable	Category	Frequency	Percentage
Gender	**Male**	**131**	**63.90**
	Female	74	36.10
Age (in years)	Less than 20	16	7.80
	20 to 35	**95**	**46.34**
	36 to 50	70	34.15
	Above 50	24	11.71
Experience of Using Mobile	< 1 year	54	26.34
Shopping Applications	**1 to 2 years**	**67**	**32.68**
	3-4 years	52	25.37
	> 4 years	32	15.61
Frequency of Using Mobile	Daily	38	18.54
Shopping Applications	**Weekly**	**66**	**32.20**
	Monthly	44	21.46
	Occasionally	62	30.24
Educational qualification	High School (12^{th})	5	2.44
	Diploma	12	5.85
	Bachelor Degree	**106**	**51.71**
	Master Degree	69	33.66
	Professional Degree	13	6.34
Occupation	Student	14	6.83
	Businessman	55	26.83
	Employee	**109**	**53.17**
	Self-employed	17	8.29
	Other	10	4.88

Source: Primary survey

Majority of them were using mobile shopping applications on weekly basis (n = 66, 32.20%). Respondents with a bachelor degree (n = 106; 51.71%) dominated the sample, followed by those with master degree educational qualification (n = 69, 33.66%). The largest percent of respondents were working as an employee either in private or public sector (n = 109, 53.17%).

4.2 Reliability of the Scale:

Using SPSS 20 version, the value of Cronbach's alpha coefficient (α) was computed for assessing the consistency of the measurement scales of each latent variable. Hair et al. (2009) proposed an alpha value of 0.600 as the threshold for survey-based research. As depicted in Table II, all Cronbach's alpha coefficient (α) values between 0.831 to 0.904 exceeded the predetermined thresholds indicating internal consistency of scales.

4.3 Hypotheses Testing Results:

AMOS 21 version was used to perform structural equation modelling (SEM) in two steps (Anderson & Gerbing, 1988; Arbuckle, 2006). Confirmatory factor analysisin stage one was utilized to evaluate the reliability, convergent validity, and discriminant validity of the measurement model to assess its application and quality. Stage two sought to analyze causal links between latent variables through SEM.

4.3.1 Confirmatory Factor Analysis (CFA)

In CFA, measurement model was evaluated by employing maximum likelihood estimation (MLE). The obtained goodness of fit (GoF) indices for measurement model exceeded the predetermined threshold values: $\chi 2=232.613$,CMIN/df=1.300,df=179,p=0.000,GFI=0.904, IFI=0.981,TLI=0.977,CFI=0.980,PNFI=0.785,RMSEA=0.038. Constructs measuring validity in CFA was evaluated using convergent and discriminant validity tests. Convergent validity measures how closely scale elements "converge" on a given construct (Bagozzi et al. 1991). According to Mostafa (2010), discriminant validity serves to validate the unique identities of each construct by ensuring their distinctiveness.

Table II: Reliability and Validity of Scale

Scale	Item	Corrected Item-Total Correlation	Cronbach's Alpha (α)	Standardized Factor Loadings (λ)*	Average Variance Extracted (AVE)	Composite Reliability (CR)
Perceived Usefulness (PU)	PU1	0.732	0.874	0.761	0.637	0.875
	PU2	0.702		0.754		
	PU3	0.746		0.827		
	PU4	0.756		0.847		
Perceived Ease of Use (PEOU)	PEOU1	0.733	0.904	0.767	0.655	0.904
	PEOU2	0.735		0.773		
	PEOU3	0.777		0.809		
	PEOU4	0.794		0.861		
	PEOU5	0.768		0.832		
Personal Innovativeness (PI)	PI1	0.630	0.831	0.723	0.558	0.834
	PI2	0.626		0.732		
	PI3	0.701		0.814		
	PI4	0.685		0.715		
Perceived Risk (PR)	PR1	0.637	0.831	0.689	0.555	0.832
	PR2	0.667		0.69		
	PR3	0.717		0.808		
	PR4	0.624		0.785		
Intention to Use (INT)	INT1	0.755	0.901	0.802	0.695	0.901
	INT2	0.780		0.832		
	INT3	0.788		0.843		
	INT4	0.792		0.856		

The CFA results indicated that standardized factor loadings (λ) of all measurement scales of different constructs were above 0.500 and statistically significant, indicating the statistical support for measurement model's convergent validity(Bagozzi and Yi, 1988).Convergent validity is confirmed by CR and AVE values (Fornell &Larcker 1981). All AVE values were higher than 0.500 (refer Table II). In addition, all CR values were also greater than 0.700. The square root of the AVE ($\sqrt{\text{AVE}}$) for each construct was compared to the squared correlations between constructs using Fornell and Larcker's (1981) method to establish discriminant validity. In table III, it is shown that $\sqrt{\text{AVE}}$ is higher than squared correlations, demonstrating discriminant validity.

Table III: Discriminant Validity of Constructs

Constructs		PU	PEOU	PI	PR	INT
Perceived Usefulness	**PU**	**0.798**				
Perceived Ease of Use	**PEOU**	0.782	**0.809**			
Personal Innovativeness	**PI**	0.748	0.784	**0.747**		
Perceived Risk	**PR**	0.752	0.746	0.681	**0.745**	
Intention to Use	**INT**	0.751	0.738	0.718	0.635	**0.834**

Note: Diagonal values display the AVE's square root for each construct.

4.3.2 Testing Structural Model:

After obtaining a measurement model that fit the data reasonably well, structural equation modeling was used to assess the structural model. More precisely, AMOS was used to assess the path coefficients of proposed links between constructs to perform path analysis.A structural model is a group of dependent relationships that interconnect the constructs of a hypothesized model (Hair et al. 1996). The fit indices of structural model is: χ^2=232.613,CMIN/df=1.300,df=179,p=0.000,GFI=0.904,IFI=0.981,TLI=0.977,CFI=0.980,PNFI=0.785 and RMSEA=0.038 showed a reasonable model-fit. As shown in Figure II, research model, which has predictive power of 64% (R^2 = 0.640), was validated by the analytical findings. Table IV contains structural path coefficients for proposed research model.

Table IV: Results of Path Analysis

	Hypothesized Relationship			Standardized Coefficients (β)	t value	Hypothesis Supported
H_1	PU	→	INT	0.365	3.084*	Yes
H_2	PEOU	→	INT	0.268	2.218*	Yes
H_3	PI	→	INT	0.235	2.072*	Yes
H_4	PR	→	INT	0.000	-0.002	No

***Note:** * < 0.05 level*

The intention of Indian consumers to use m-shopping apps was strongly and significantly predicted by PU (β=0.365,t=3.084;p<0.05). Moreover, PEOU (β=0.268,t=2.218;p<0.05) and PI (β=0.235,t=2.072;p<0.05) were discovered to be significantly and positively related to their intention to use m-shopping apps (refer Table IV). However, hypothesized path between PR and consumers' intention to use was not significant (p>0.05).

5. Discussion of Research Findings

As a result of proliferation of smartphones and advancements in mobile technology, m-shopping has significantly increased. Consumers are increasingly utilizing mobile devices for product research, price comparison, and completing transactions. Social media platforms play a significant role in influencing purchasing decisions. Integration of shopping features within social media apps has become more common. This research has recognized numerous antecedents having an immediate and direct influence on the intention to use m-shopping apps with latest technology, addressing a gap in existing research. To be more precise, the outcomes of this study demonstrated that the hypotheses H_1 through H_3 are statistically

accepted. In particular, the current study's outcomes demonstrate that, within the context of India, intention (INT) is significantly and consistently associated with three independent factors, including PU, PEOU and PI, as depicted in below Figure II.

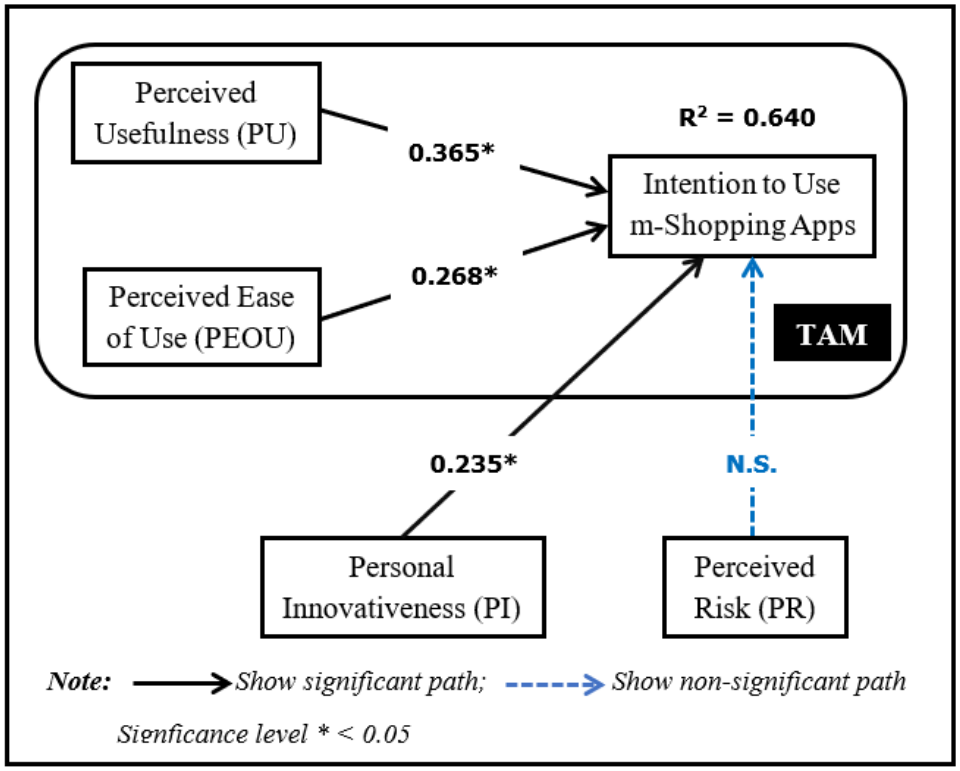

Figure II: Structural extended TAM with standardized path coefficients and R^2

One of the interesting outcomes of the present study is that perceived usefulness has a favorable and substantial effect on intention to use m-shopping apps in India, as per the findings of this study (H_1: β = 0.365; t = 3.084). The results of this investigation were found to be consistent with those of Shunbo Yuan et al., 2014. This study's further significant result is that PEOUis also positively influencing INT. Hence, with related to India, hypothesis H_2 (β = 0.268; t = 2.218) is acceptable. Also, this outcome is in keeping with earlier studies (Aldás-Manzano et al., 2009).

H_3 about relationship between PI and INT is statistically significant (β = 0.235; t = 2.072), and therefore, this hypothesis is accepted, The statistical analysis revealed that the relationship between PI and INT is significant (β = 0.235; t = 2.072), thus supporting the acceptance of H_3identifying PI among the critical aspects for intention to use mobile shopping apps in India. On the contrary, the impact of perceived risk on the intention to utilize m-shopping applications is not statistically significant (β = 0.000; t = -0.002; p > 0.05). Since mobile shopping applications of different companies associated with selling goods over e-commerce platforms nowadays are equipped with robust security measures like strong passwords, one-time password verification and appropriate encryption in their m-shopping apps, this factor i.e. perceived risk (H_4) may not significantly impact Indian consumers' intention to utilize m-shopping apps.

6. Conclusion and Implications

This study's major goal is to pinpoint many elements, including PU, PEOU, PI and PR affecting the using of mobile shopping application the objectives of users to use new

technology in the India by applying a well-established TAM model as a conceptual research framework. As mobile purchasing continues to transform the retail environment, comprehending the complicated interplay between humans and technology becomes vital for building smooth and focused on users buying experiences.This study explores the dynamic interaction that exists between customers and mobile purchasing technology, focusing on the ways that technical improvement and human behavior, habits, and priorities interact.This study intends to offer significant insights for business experts and scholars by thoroughly examining the junction of human and technological interactions in the field of mobile commerce. 205 respondents out of 250 questionnaires yielding a response rate of 82% were contacted with structured questionnaire by following non-probability convenience sampling technique. The extended version of TAM model of this study with standardized path coefficient and R2 is portrayed in Figure II.Considering the outcomes of this research, it is revealed that out of four hypotheses, three hypotheses are found to be statistically and positively significant in the content of India.

The results are anticipated to add to the current conversation about enhancing mobile purchasing experiences and promoting a positive interaction between users and the rapidly changing technological environment. Utilizing the latest innovations and integrating harmoniously with human behavior, mobile purchasing has emerged as a crucial component of the contemporary consumer shopping experience. Personalized suggestions based on past searches, buying trends, and consumer habits are made possible by technology.Virtual reality and augmented reality technology have made it possible for customers to virtually try on clothes, see furniture in their homes, and evaluate how products work with their lifestyles before making a final purchase decision. Instant customer service is offered by AI-powered chatbots, which also assist consumers with the buying procedure navigation and effective query resolution. AI uses consumer data analysis to improve overall company strategy, manage inventories, and forecast trends. Real-time evaluations and ratings are made possible by technology, which helps consumers make educated selections and builds confidence in the online buying conditions.

Consumers may make moral decisions by using mobile devices to access comprehensive information on product origins, processing methods, and environmentally friendly activities.

In conclusion, there is a symbiotic interaction between human behaviour, technology, and mobile shopping that significantly influences the current retail experience. Modern mobile devices and technological advances work together seamlessly to provide unparalleled ease, customization, and immersive features that have completely changed the way consumers purchase. The connection between mobile purchasing and human behavior is further highlighted by the emergence of social commerce, influencer advertising, and instantaneous interaction. During their shopping experience, shoppers want for meaningful relationships, a sense of belonging, and validation from society in addition to merchandise. Furthermore, the relationship between digital purchasing and human values now includes moral dilemmas, ecological issues, as well as information openness. With the help of technological advances, customers may make well-informed decisions that are consistent with their beliefs as they become more aware of the effect of their purchases. With the help of technological advances, customers may make well-informed decisions that are consistent with their beliefs as they become more aware of the effect of their purchases. The intersection of technological advances, human behaviour, and mobile shopping has resulted in a constantly changing environment that blurs the lines among online as well as physical retail. With a prior lack of ease, customization, and choice, this relationship gives customers the opportunity to shape the coming decades of business in a way that is simultaneously highly advanced in technology and acutely aware of the wants and needs of people. A number of technologies

that together improve consumer ease, customization, and interaction are closely related to m - shopping. To guarantee the safety of user information and monetary transactions, safe payment gateways, secrecy, and methods for verification are essential.
The key factor in online transactions is trust. Individuals are more inclined to participate in mobile shopping when they have assurance in the security of their personal and financial details.These advancing technologies present fresh avenues for human interaction with products, leading to more captivating and immersive shopping encounters. The growing consciousness of data privacy issues plays a pivotal role in shaping human interactions with mobile shopping platforms, favoring those that prioritize ethical data practices. The connection between mobile shopping, humans, and technology is mutually beneficial. Technology facilitates the convenience, personalization, and security sought by humans in their mobile shopping experiences, and concurrently, human preferences and behaviors drive the evolution of technology in this domain. This dynamic interaction continues to shape the current and future landscape of mobile commerce.

Limitations and Scope for Future Research:
Although this study produced interesting results, its main limitation is that its findings cannot be applied to a wider setting. One limitation of the research conducted on online mobile shopping in India may be the potential exclusivity of certain demographics within the study. If the research predominantly focused on urban areas or specific income groups, its findings may not be fully representative of the diverse mobile shopping behaviors across various socio-economic backgrounds in the country.Second, the research may not sufficiently account for cultural nuances that influence online mobile shopping behaviors in India.
Third, the study might not extensively address issues related to online security and privacy concerns, which are crucial aspects of online mobile transactions. Future research can explore consumer perceptions of security measures, the effectiveness of security features in mobile apps, and strategies to enhance trust in online mobile shopping platforms.To advance the understanding of m-shopping in India, research in future period could explore the impact of new technologies, such as 5G connectivity and evolving mobile app interfaces, on user experiences and purchasing patterns. To gain a more clear understanding of consumer behavior, it would be worthwhile to study how cultural influences and regional differences in India affect m-shopping patterns.

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