AN EMPIRICAL INVESTIGATION INTO WHY STARTUPS RESIST USE OF DIGITAL MARKETING

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ABSTRACT

Despite the challenges of pandemics and economic slowdown, the Indian economy is witnessing a surge in entrepreneurial activities. At the same time, we are also seeing start-up companies witnessing financial losses, mass lay-offs and salary cuts due to pandemic restrictions and economic slowdown. The main reason for failure is the lack of a viable strategy to develop and execute a strong branding, promotion and marketing strategy. Digital marketing offers a viable and affordable option to start-ups for marketing and brand building. However, many of the start-ups are resistant to the use of digital marketing for marketing and brand building. The purpose of the research study is to understand why start-ups resist the adoption of digital marketing tools and technologies. We have conducted a cross-sectional study by collecting primary data from 355 respondents from a similar number of companies, who were either owners of start-up companies or managers working in start-up companies. The important finding was that factors like usage barrier, value barrier, risk barrier and psychological barrier were the major inhibitors to the adoption of digital marketing by start-ups. Gender, age and size of the company played a moderating role in influencing the adoption intention. For male owners of start-up companies, the effect of usage barrier, value barrier, risk barrier and psychological barrier all were significant, while for female owners, only the effect of value barrier and risk barrier was significant. Value barrier and risk barrier had a significant impact on young owners, while usage barrier and value barrier had a significant impact on middle-aged owners and value barrier and risk barrier had a significant impact on old owners.

Keywords: start-ups, digital marketing, innovation resistance theory, functional barrier, psychological barrier

1. INTRODUCTION

Despite the pandemic and economic slowdown challenges, the Indian economy has witnessed a surge in entrepreneurial activities. The number of start-ups registered in India, as of 31st March 2022, is 61,400, which is the third highest in the World (Nair, 2022). India also has more than 100 Unicorns. A Unicorn is a start-up that has reached a billion-dollar valuation (Team Inc42, 2022).

While on one side, we have start-ups in India that are scaling up at a rapid pace, there are also start-ups that are facing immense difficulty in reaching out to the right customers and sustaining their business. These are the start-ups that are operating on meagre working capital and do not have sufficient cash to spend on promoting their business through the print medium, electronic medium or sponsorships. For them, digital marketing is a viable option where the return-on-ad-spend (ROAS) can be maximized using an optimum budgetary allocation (Chahal & Chakraborti, 2018; Sharma et al., 2022a; Jain et al., 2021).

Digital marketing offers both organic and inorganic options for marketing and promotion. Organic digital marketing can be done without any financial investment.

"Search Engine Optimization (SEO)", "Social Media Marketing (SMM)", "E-mail Marketing" and "Content Marketing" come under the organic options. Under the inorganic option, payment needs to be made to Google and social media companies. Search Engine Marketing (SEM), promoting social media pages or collecting leads through forms and affiliate marketing comes under the inorganic option (Ryan, 2016).

Under the organic option, the marketer has very limited control over the process, and brand building takes time. The inorganic option gives full control to the marketer and brand building is faster than the organic option. In the inorganic option, the marketer has a choice to start with a small investment, analyse whether marketing goals have been achieved and then go for incremental hiking of the budget (Gupta, 2018).

Despite all the flexibility and affordable options to get high visibility and greater reach among targeted customers, are start-ups adopting digital marketing tools? We conducted a survey among 1000 start-up companies in nine cities and found that only 32% of the surveyed companies are currently using digital marketing tools, 23% of the companies are considering using them in the future and 45% of the companies are not using the same. The main reasons given for adopting digital marketing tools are low cost, high reach, better control over the process and mapping the outcome through analytics. The main reasons given for not adopting digital marketing tools are lack of understanding, lack of capability, lack of trust and fear or hacking.

There are a lot of research studies that have been carried out on adoption of technology by entrepreneurs and business enterprises. The diffusion of innovation (DOI) theory was propagated by Rogers (1962). Later Fishbein and Ajzen (1975) developed the theory of reasoned action (TRA). The postulates of TRA were used by Fred Davis (1989) to develop the technology acceptance model or TAM. Tornatzky & Fleischer (1990) developed the Technology-Organization-Environment (TOE) Model that mapped the effects of technological factors, organizational factors and environmental factors regarding technology adoption. Venkatesh et al. (2003), added more constructs to the TAM and other models to develop the Unified Theory of Acceptance and Use of Technology (UTAUT) Model. James Westaby (2005) postulated the behavioural reasoning theory (BRT) Model that studied both reasons for and reasons against adoption of technology.

While these theories and models have been used by scholars to explain why companies adopt technology, the Innovation Resistance Theory or IRT given by Ram & Seth (1989) specifically provides the constructs to analyse why companies and entrepreneurs resist the use of technology. While using this model to conduct our study, we have done value addition by conducting a multi-group analysis to find out whether there is a significant difference in approach to digital marketing adoption based on gender, age and size of the company. This makes our research work important for scholars and practitioners who are doing research on the adoption of digital marketing by start-ups and entrepreneurs.

The two research questions that have been addressed through our conceptual model are: RQ1. What are the barriers that significantly impact the adoption of digital marketing by start-ups? RQ2. Is there a significant difference in approach to digital marketing adoption based on gender, age and size of the company? A cross-sectional study was carried out on 355 respondents, who were either owners or managers of start-up companies to draw the inferences by analysing the data using the Partial Least Square – Structural Equation Modelling (PLS-SEM) technique and SmartPLS software (Sharma et al., 2021, 2022a, 2022b).

The novelty of our research work comes from two aspects. First, our study of extant literature revealed that no major research work has been carried out to understand why start-ups are resistant to adopting digital marketing. This represented a major gap in our study of secondary literature. Second, no significant research work has been carried out to understand whether there is a significant difference in approach to digital marketing adoption based on gender, age and size of the company. Our research work, done by using Multigroup Analysis (MGA), seeks to address this research gap.

2. LITERATURE REVIEW

2.1 Digital Marketing Adoption Among Start-ups

According to Kotler (2010), "Digital Marketing is defined as a form of direct marketing which links consumers with sellers electronically using interactive technologies like emails, websites, online forums and newsgroups, interactive television, mobile communications".

The earlier version of digital marketing comprised of "search engine optimization (SEO)" and "search engine marketing (SEM)" offered by Google. There was also social media marketing (SMM) done through Facebook, Instagram, Twitter, YouTube, LinkedIn and others. The other tools of first-generation digital marketing were "e-mail marketing, mobile marketing and affiliate marketing" (Sharma *et al.*, 2021). Then came Digital Marketing 2.0, where marketers used tools like Content Marketing, Social Listening, Online Reputation Management (ORM) and Growth Hacking. Now we are in the era of Digital Marketing 3.0, where the tools used are Chatbots, Cookies, Automated Responders, "Artificial Intelligence and Machine Learning (AIML)" and "Internet-of-Things (IoT)" for marketing and promotions (Chahal & Chakraborty, 2018). Companies are now mapping digital footprints and using that for remarketing (Arya, Paul & Sethi, 2019).

There have been several research works done by scholars regarding the adoption of digital marketing by companies. In their research work on digital marketing adoption by small businesses, Ritz, Wolf and McQuitty (2018) inferred that "technological benefits may not be the only motivators for small business owner/managers who undertake digital marketing". Teixeira *et al.*, (2018), identified factors like top management involvement, support and trust, perceived utility and ease of use as the main drivers of digital marketing adoption by start-ups. Taiminen and Karjaluoto (2014) found that small and medium enterprises are not aware of the potential benefits that can be accrued from digital marketing, and hence are not using the same. From the study of extant literature, we found that there was no major study done on digital marketing adoption by start-ups and why they resist the use of digital marketing, and that represents a major gap.

2.2 Innovation Resistance Theory (IRT)

There have been several theories and models that explain why entrepreneurs and managers adopt innovative technology. However, there are very few theories that have studied why people resist innovative technologies. One of such models is the innovation resistance theory (IRT) proposed by Ram and Sheth (1989).

The innovation resistance theory explains two main barriers to adopting innovation which are called "functional barriers and psychological barriers". The functional barriers are further classified as "usage barriers, value barriers and risk barriers". The psychological barriers are classified as traditional barriers and image barriers. From the study of extant literature, we have adapted the constructs and indicators for conducting our study on resistance to the adoption of digital marketing by start-ups.

3. CONCEPTUAL FRAMEWORK AND HYPOTHESIS FORMULATION

The conceptual model is given in Figure – 1, which illustrates the relationship between the constructs usage barrier, value barrier, risk barrier and psychological barrier and the effect on adoption intention of digital marketing. The present study investigates the factors leading to adoption intention in the context of digital marketing adoption by start-ups. This is conceptually based on innovation resistance theory (IRT) which explains the various types of resistance faced during the adoption of technology (Ram and Sheth, 1989). There are several studies conducted on barriers to adoption of innovative technologies in different sectors like eco-friendly cosmetics (Sadiq, Adil, & Paul, 2021), internet banking services (Matsuo, Minami, & Matsuyama, 2018) and online shopping (Lian & Yen, 2014). However, none of the studies have used the innovation resistance theory to explain why start-ups resist the adoption of digital marketing for promotional purposes.

3.1 Hypothesis Formulation

Ram and Sheth (1989) explained that "usage barrier occurs when the innovative technology is not compatible with existing work processes, or it requires a change in work routines". The owners of start-ups and managers working in start-ups do not feel comfortable adopting technology that needs a

drastic change in the work process as this will entail training the employees and creating an environment of uncertainty and ambiguity. They would rather continue with the traditional processes until they are forced to change due to some external stimuli.

Laukkanen and Cruz (2010) have postulated that usage barrier poses the strongest resistance when it comes to the adoption of technology. There are several studies done with regards to the adoption of technology in airports (Han, Lee & Kim, 2018) and mobile payment services (Li´ebana-Cabanillas and Lara-Rubio , 2017) which have shown that usage barrier has a significant impact on technology adoption. Based on the extant literature, we have developed our hypothesis:

H1. The usage barrier has a significant impact on the adoption intention of start-up entrepreneurs and managers with regard to digital marketing tools and technologies

The second type of resistance to technology adoption comes from the value barrier. Ram and Sheth (1989) have explained that "value barrier occurs when the innovative technology fails to deliver a strong performance-to-price value compared with product substitutes". Or in other words, we can say that the user is not getting the value for money by adopting the new technology. In the case of start-ups, if the entrepreneur feels that there is no substantial value achieved by switching from the traditional mode of publicity and promotion to digital media, they will resist the adoption of digital marketing tools and technologies.

The phenomenon of the value barrier has been studied by Laukkanen & Kiviniemi (2010) in the context of mobile banking. Their inference has been that value barrier has a significant impact on technology adoption process. Further studies done by Sivathanu (2018) confirmed that value barrier indeed poses a serious resistance to the adoption of technology. Other studies done on hotels (Okumus et al., 2017) and restaurants (Lee et al., 2019) have confirmed that value barrier has a significant impact on the adoption of technology. From these studies, we have formulated the hypothesis:

H2. The value barrier has a significant impact on the adoption intention of start-up entrepreneurs and managers with regards to digital marketing tools and technologies

The next barrier to adoption of technology comes from risks associated with the same. There are four types of risks explained by Ram and Sheth (1989). They are "physical risk, economic risk, functional risk and social risk". Physical risk is the fear that there would be harm caused to the physical property or assets of the entrepreneur. Economic risk is the fear that there will be monetary loss to the start-up business. Functional risk is that the performance or productivity of the business will go down. Social risk is the fear that the entrepreneur will face criticism from their peers or customers for adopting digital marketing tools.

A study done by Laukkanen (2016) on mobile banking revealed that customers feared the adoption of mobile banking due to the perceived risks of low battery life of mobiles and the risk of hacking. Further studies done by Sivathanu (2018) also confirmed the effect of risk barrier on technology adoption. A recent study done by Huang et al (2020) on hospitality services found that consumers are likely to discard their intention to adopt technology because of perceived risks. Following these arguments, we have formulated our hypothesis as follows:

H3. The risk barrier has a significant impact on the adoption intention of start-up entrepreneurs and managers with regards to digital marketing tools and technologies

The traditional barriers and image barriers are classified under the construct "psychological barrier" (Ram and Sheth, 1989). A "traditional barrier" may occur when the regular routine gets hampered. Lian and Yen (2014), in their research study done on online shopping, have shown that there is a negative association between technology adoption and traditional barrier. Other studies done by different scholars on mobile banking (Laukkanen, 2016), mobile shopping (Gupta and Arora, 2017) and mobile payment services (Sivathanu, 2018) have further confirmed that traditional barrier can create resistance to technology adoption.

According to Ram and Sheth (1989), "an image barrier arises from stereotypes about an

innovation, which may relate to its country of origin or an associated brand". For example, there are a lot of restrictive policies of Google and Facebook and other social media companies, which are framed as per USA Government rules and regulations, which might not be applicable in Indian context. Also, if the entrepreneur has a preconceived notion that digital marketing tools are complicated, that image might become a barrier to the adoption of digital marketing tools and technologies.

Hence, we can hypothesize that:
H4. The psychological barrier has a significant impact on the adoption intention of start-up entrepreneurs and managers with regards to digital marketing tools and technologies

The proposed conceptual model is given below:

The cross-sectional data was collected from a sample of 355 respondents, who were either owners or managers of start-up companies. The start-ups were identified from the list of start-up companies given in https://www.startupindia.gov.in. We sent our questionnaire to 400 companies and got response from 355 companies, which indicates a response rate of 88.75%.

We have used non-probability purposive sampling design to conduct descriptive research (Sharma, 2021; Sharma et al., 2022b, 2022c). The minimum sample size required was found to be 150 using the Daniel Soper Sample Size Calculator with an effect size of 0.3, statistical power level of 0.8, five latent variables, 23 indicators and probability level of 0.05 (Soper, 2022). Our target sample size of 355 is much higher than the minimum required sample size.

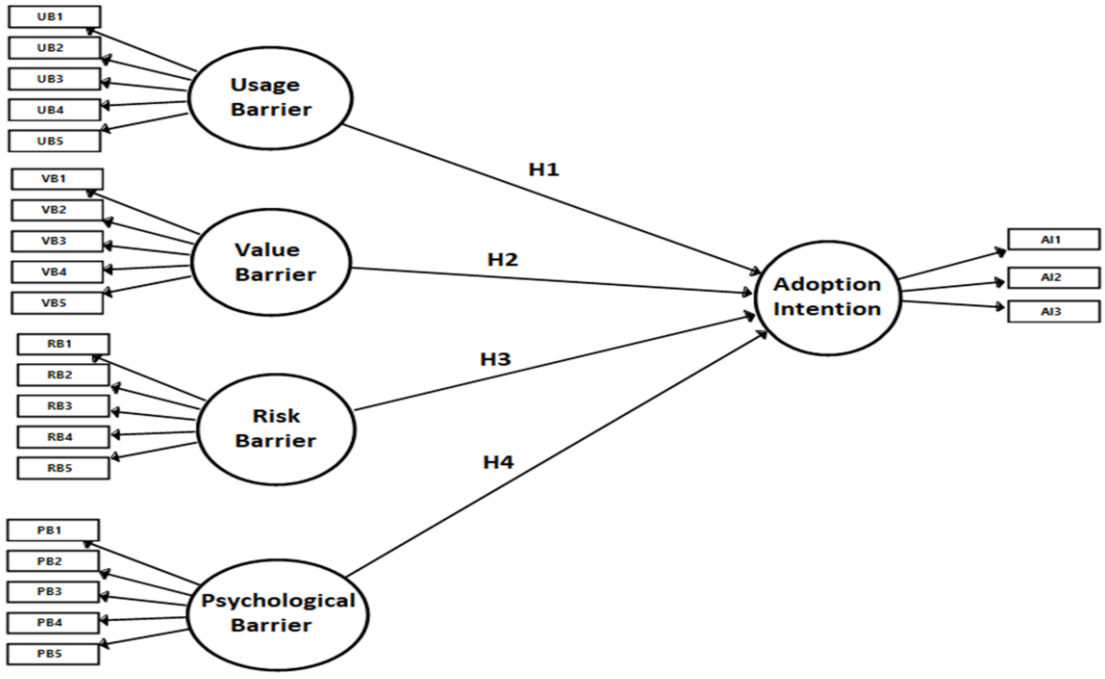

Figure – 1: Conceptual Model

4. RESEARCH METHODOLOGY

For conducting the research on why start-ups resist the use of Digital Marketing, we have used IRT given by Ram and Sheth (1989) to construct a conceptual model comprising of five constructs and twenty-three indicators. The table of measurement items is given in Appendix I. The conceptual model is given in Figure – 1.

5. DATA ANALYSIS AND INFERENCES

The hypotheses formulated for this research were tested through a two-stage process given by Hair *et al*. (2019). In the first stage, the construct reliability, convergent validity and discriminant validity were ascertained through the measurement model assessment. In the second stage, the strength and significance of the path coefficients is evaluated through structural model

assessment to ascertain the relationships hypothesized between the constructs (Hanaysha et al., 2021; Rashid et al., 2022).

5.1 Measurement Model Analysis

The measurement model has been assessed following the process given by Hair *et al.* (2019). Under the measurement model assessment, we have assessed the indicator reliability, internal consistency, convergent validity and discriminant validity. The factor loadings of the indicators are above the threshold value of 0.708, except for AI3 which is lower than the threshold value. However,

Table – 1: Demographic Details of the Respondents

Profile	Characteristics	Frequency	Percentage
Gender	Male	202	56.9
	Female	153	43.1
Age	20-30	154	43.4
	30-50	112	31.5
	Above 50	89	25.1
Yearly Turnover	Below INR 20 lakhs	164	46.2
	INR 20 lakhs - INR 10 Million	108	30.4
	Above INR 10 Million	83	23.4

Table – 2: Reliability and Validity of Construct Loadings and Indicator Loadings

Construct	Items	Indicator Loadings	VIF	CR	AVE
Usage Barrier (UB)				0.918	0.693
	UB1	0.777	1.797		
	UB2	0.835	2.271		
	UB3	0.838	2.225		
	UB4	0.877	2.725		
	UB5	0.833	2.097		
Value Barrier (VB)				0.907	0.662
	VB1	0.828	2.110		
	VB2	0.786	1.926		
	VB3	0.767	1.698		
	VB4	0.841	2.175		
	VB5	0.844	2.264		
Risk Barrier (RB)				0.906	0.658
	RB1	0.812	2.016		
	RB2	0.800	1.856		
	RB3	0.773	1.704		
	RB4	0.839	2.157		
	RB5	0.830	2.135		
Psychological Barrier (RB)				0.918	0.691
	PB1	0.870	2.567		
	PB2	0.825	2.130		
	PB3	0.828	2.093		
	PB4	0.808	1.993		
	PB5	0.824	2.137		
Adoption Intention (AI)				0.813	0.594
	AI1	0.786	1.391		
	AI2	0.837	1.447		
	AI3	0.680	1.162		

this is acceptable as the composite reliability score of AI is above the satisfactory level of 0.70 (Saari, Damberg, Frömbling, & Ringle, 2021).

The internal consistency has been measured with using Jöreskog's (1971) composite reliability (CR). The composite reliability values in our research are between 0.813 and 0.918, which are within the acceptable range (Jöreskog, 1971). As per Hair *et al*. (2019), "the composite values in the range of 0.70 and 0.95 are considered to be satisfactory to good". Our values do not cross the threshold range of 0.95 and hence can be considered satisfactory.

The convergent validity has been measured with average variance extracted (AVE). The AVE values of all the constructs in our study exceed the critical value of 0.5, which indicates that the constructs explain at least 50 per cent of the variance of its items (Hair *et al*., 2019).

The final step of the measurement model assessment is assessing the discriminant validity. The discriminant validity in our study has been assessed using the Fornell-Larcker Criterion (1981) and Heterotrait-Monotrait (HTMT) ratio (Henseler et al., 2015). The Fornell-Larcker Criterion readings of our research are given below:

Table – 3: Discriminant Validity (Fornell-Larcker Criterion)

	AI	RB	PB	UB	VB
AI	0.796				
RB	0.654	0.811			
PB	0.642	0.627	0.831		
UB	0.613	0.563	0.609	0.832	
VB	0.766	0.589	0.634	0.606	0.814

In the Fornell-Larcker Criterion Table, shared variance values were less than the corresponding average variance extracted. Hence, we can infer that the discriminant validity is established (Fornell and Larcker, 1981).

A better way to measure the discriminant validity is by using HTMT Ratio (Henseler et al., 2015). The HTMT is defined as "the mean value of the item correlations across constructs relative to the (geometric) mean of the average correlations for the items measuring the same construct (Hair *et al*., 2018)". The HTMT values of our study is given in the following table:

Table – 4: Discriminant Validity – Heterotrait Monotrait (HTMT) Ratio

	AI	RB	PB	UB	VB
AI					
RB	0.886				
PB	0.842	0.712			
UB	0.800	0.640	0.683		
VB	0.640	0.674	0.721	0.688	

The HTMT values of our study are less than the threshold value of 0.90 (Henseler et al., 2015). Hence, we can infer that discriminant validity of our research has been established.

The cross loadings of the discriminant validity are given in Appendix II

5.2 Structural Model Assessment

After completing the measurement model assessment, the next step is to assess the structural model. This is done through the path analysis through a series of regression equations and assessing their significance (Hair *et al*., 2018).

In the first step of structural model assessment, we have measured the R^2 values of adoption intention which is coming to 70.6%. As per explanation given by Shmueli and Koppius (2011), "the R^2 measures the variance, which is explained in each of the endogenous constructs and is therefore a measure of the model's explanatory power". The R^2 values of adoption intention is high and hence validates the explanatory power of the proposed model.

The predictive importance and relevance were tested through the effect size (f^2) and predictive accuracy ("Stone-Geisser's $Q^{2''}$) of the proposed model. The f^2 value of AI has come to 50.3%, which is considered to be large effect size (Cohen, 1988). The Stone-Geisser's Q^2 in our research work has been found to be 40%, which indicates a moderate predictive relevance (Geisser, 1975; Stone, 1974).

The path analysis found that all four hypotheses are supported. The results of the path analysis is given in the following table:

Table – 5: Structural Model Assessment

				Confidence Interval				
Outcome	Predictor	Hypothesis	β	2.50%	97.50%	p Values	Significance	f^2
AI (R^2 = 0.706)	UB	UB -> AI	0.101	0.025	0.179	0.011	Yes	0.021
	VB	VB -> AI	0.545	0.451	0.631	0.000	Yes	0.503
	RB	RB -> AI	0.213	0.12	0.306	0.000	Yes	0.085
	PB	PB -> AI	0.102	0.016	0.185	0.022	Yes	0.019

The analysis shows that adoption intention is significantly impacted by value barrier (β= 0.545, p<0.001). It is also seen that adoption intention is significantly impacted by risk barrier (β= 0.213, p<0.001), Finally, we can also infer that usage barrier (β= 0.101, p<0.05) and psychological barrier (β= 0.102, p<0.05) both have a significant impact on adoption intention.

lakhs. The medium-scale start-ups are the ones that have a turnover between INR 20 lakhs to INR 10 million. The large-scale start-ups are the ones that have a turnover of more than INR 10 million.

We found that there is a significant difference in approach to digital marketing adoption based on gender, age and size of company. For male owners of start-up companies, the effect

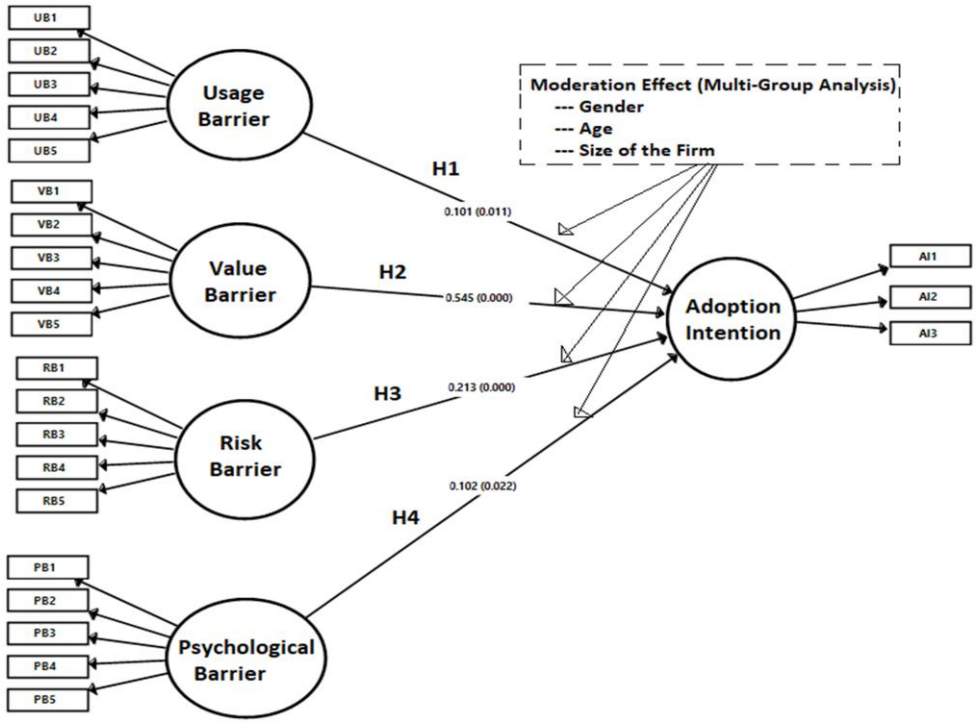

Figure – 2: Structural Model Assessment

5.3 Multigroup Analysis

Based on extant literature, we have examined the moderating effect of gender, age and size of start-up companies on digital marketing adoption by start-ups using the bootstrap method and 95% confidence interval. For our research work, we have classified 20-30 years age group as young, 30-50 years age group as middle aged and above 50 years of age as old. The small-scale start-ups are the ones that have an annual turnover of less than INR 20

of "usage barrier, value barrier, risk barrier and psychological barrier" all were significant, while for female owners, only the effect of "value barrier and risk barrier" were significant. Value barrier and risk barrier had a significant impact on young owners, while "usage barrier and value barrier" had a significant impact for middle-aged owners and "value barrier and risk barrier" had a significant impact on old owners.

The size of the start-up firm also mattered when it comes to digital marketing adoption. For small scale start-ups, "value barrier and risk barrier" had significant impact, while "usage barrier and psychological barrier" had no significant impact. For medium scale start-ups, "usage barrier and value barrier" had significant impact while "risk barrier and psychological barrier" had no significant impact. For large scale start-ups, "usage barrier, value barrier and risk barrier" all had significant impact while psychological barrier had no significant impact.

Table – 6: Results of PLS-MGA Analysis

Path	Male	Female	Young	Middle Aged	Old	Small Scale Startup	Medium Scale Startup	Large Scale Startup
UB -> AI	**0.006****	0.521^{ns}	0.726^{ns}	**0.0200***	0.236^{ns}	0.932^{ns}	**0.023***	**0.025***
VB -> AI	**0.000*****	**0.000*****	**0.000*****	**0.000*****	**0.000*****	**0.000*****	**0.000*****	**0.000*****
RB -> AI	**0.010****	**0.000*****	**0.001****	0.104^{ns}	**0.016***	**0.005****	0.132^{ns}	**0.005****
PB -> AI	**0.009****	0.419^{ns}	0.168^{ns}	0.065^{ns}	0.236^{ns}	0.182^{ns}	0.088^{ns}	0.097^{ns}

NB: *** = p<0.001, ** = p<0.01, * = p<0.05, ns = not supported

6. DISCUSSION

The research study was carried out to understand why start-ups resist use of Digital Marketing. Though there are many theories and models like DOI (Rogers, 1962), TAM (Davis, 1989) and TOE (Tornatzky and Fleisher, 1990) that explains why entrepreneurs and managers adopt technology, there are very few theories and models like Innovation Resistance Theory (Ram and Sheth, 2001) that explain why they resist using innovations and new technology. This study is important as the inferences help us to understand why start-up companies are hesitant to use digital marketing tools and technologies although the benefits offered are quite large.

Through extensive study of extant literature, we have identified constructs like "usage barrier, value barrier, risk barrier and psychological barrier" that help to explain the adoption intention of digital marketing among start-ups. The inference from the study shows that the latent variables like "usage barrier, value barrier, risk barrier and psychological barrier" played a significant role in explaining the resistance to adoption intention of digital marketing among start-ups in India. This is in accordance with prior research done on different sectors using the IRT Model (Sadiq, *et al*., 2021; Ma & Lee, 2019; Matsuo *et al*., 2018 Lian, *et al*., 2014). This study will definitely be of key importance to theoretical researchers, managers and entrepreneurs associated with start-ups and policy makers to understand why digital marketing technology is not being adopted by start-ups in large scale.

The final conclusion of this research is that value barrier (β= 0.545, p<0.001), risk barrier (β= 0.214, p<0.001), usage barrier (β= 0.102, p<0.05) and psychological barrier (β= 0.101, p<0.05) play a significant role in explaining the reasons against adoption of digital marketing by start-ups. Gender, age and size of the start-up also have a significant bearing on the adoption of digital marketing.

7. THEORETICAL IMPLICATION

There are four major theoretical implications of our study. First, it contributes to the extant literature on digital marketing adoption by start-up companies. The research interest in start-up companies and entrepreneurship is rising in India with a growing number of start-up companies getting the Unicorn status, and this research work will add to the emerging area of research.

Second, we have added value to the IRT Model by applying multi-group analysis (MGA). This research work adds value to the seminal work done by Ram and Sheath (1989) by using moderators like gender, age and size of start-up companies to examine the adoption of digital marketing in different contexts. This will help future researchers to effectively understand the factors that create resistance when it comes to adoption of digital

marketing and develop clear and concise solutions to resolve the issues.

Third, there are quite a number of studies that have been done on why start-up companies adopt digital marketing. Teixeira et al. (2018) conducted a study on main Factors in the adoption of digital marketing in start-ups. Ananya Goswami (2016) conducted a study on E-Commerce Adoption by Women Entrepreneurs in India. Ritz, Wolf and McQuitty (2019) conducted a study on digital marketing adoption and success for small businesses. Our study has been done on a different context and shed light on why start-ups resist use of digital marketing. This study can guide other research scholars who are interested to understand why start-up companies are not adopting digital marketing tools and technologies despite several advantages and cost benefits.

Fourth, although the IRT has been employed by different researchers to explain the resistance to adoption of technology in different sectors, this is perhaps the first time that IRT has been used to explain the resistance to adoption of digital marketing by start-ups. Our study provides a validation that the constructs usage barrier, value barrier, risk barrier and psychological barrier indeed have a strong bearing on the digital marketing adoption by start-ups. This increases the scope of the application of the IRT Model and will help future scholars to build upon this model and apply this is studies relating to start-ups and entrepreneurs.

Practical Implication

There are three main practical implications of our study. First, the results from our study show that usage barrier, value barrier, risk barrier and psychological barrier indeed have a strong bearing on the digital marketing adoption by start-ups. The owners and managers of start-ups need to address these issues proactively in order to make digital marketing adoption successful in their business venture. this can be done organizing training sessions to make the users understand how to use the digital marketing tools in the right way and by using analytical tools associated with digital marketing to demonstrate that use of digital marketing can lead to tangible gains and competitive advantage.

Second, our study found that there is significant difference in approach to digital marketing adoption based on gender, age and size of company. For male owners of start-up companies, the effect of "usage barrier, value barrier, risk barrier and psychological barrier" all were significant, while for female owners, only the effect of "value barrier and risk barrier" were significant. Value barrier and risk barrier had a significant impact on young owners, while "usage barrier and value barrier" had a significant impact for middle-aged owners and "value barrier and risk barrier" had a significant impact on old owners. This shows that we cannot have a broad and generalized policy and strategy for the successful adoption of digital marketing. The policy and strategies pertaining to digital marketing adoption in start-ups must be customized as per age and gender.

Third, our study revealed that the size of the start-up firm also mattered when it comes to digital marketing adoption. For small scale start-ups, "value barrier and risk barrier" had significant impact, while "usage barrier and psychological barrier" had no significant impact. For medium scale start-ups, "usage barrier and value barrier" had significant impact while "risk barrier and psychological barrier" had no significant impact. For large scale start-ups, "usage barrier, value barrier and risk barrier" all had significant impact while psychological barrier had no significant impact. This is an important finding that needs to be taken into consideration for business strategists and policy makers. The policies and strategies made for motivating start-ups to adopt digital marketing must be different based on whether the start-up belongs to the small scale, medium scale and large scale category.

8. Conclusion, Limitation and Future Work

This research work made an endeavour to understand why start-ups resist use of digital marketing by applying the innovation resistance theory. This study used constructs like "usage barrier, value barrier, risk barrier and psychological barrier" to understand the reasons why start-ups do not adopt digital marketing. The inference is that "usage barrier, value barrier, risk barrier and psychological barrier does have a significant impact on the adoption of digital marketing for brand building, promotions and marketing

by start-ups". The study also uses moderators like gender, age and size of the start-up company to understand whether there is significant difference between the moderators in creating resistance to adoption of digital marketing tools and technologies by start-ups.

This research work has examined the reasons that work against the adoption of digital marketing tools and technologies by start-ups. Future researchers should also examine the reasons that motivate the use of digital marketing tools and technology by start-ups. A better approach would be to simultaneously examine both the "reasons for and reasons against the adoption" of digital marketing tools and technologies by start-ups. For this, the behavior reasoning theory (BRT) given by James Westaby (2005) might be useful to conduct the research. A longitudinal study in place of cross-sectional study might give more incisive inferences.

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Appendix – I : Measurement Items

Construct	Item Code	Item Description	Adapted from Source
Usage Barrier (UB)	UB1	Using digital marketing tools was difficult for me	Laukkanen (2016), Ram and Sheth (1989)
	UB2	Using digital marketing tools was inconvenient for me	
	UB3	The method and procedure of using digital marketing tools is not clear to me	
	UB4	The digital marketing tools are not operating the way I want to be	
	UB5	Using digital marketing tools was complex and complicated for me	
Value Barrier (VB)	VB1	Digital marketing tools do not offer any value addition to my business	Laukkanen (2016), Ram and Sheth (1989)
	VB2	Digital marketing tools do not offer any competitive advantage	
	VB3	Digital marketing tools does not help me to reach out to my target customers	
	VB4	Digital marketing tools does not help me to get more visibility in the market	
	VB5	Digital marketing is not more effective and affordable than traditional modes of promotion	
Risk Barrier (RB)	RB1	I fear that my system may be hacked if I use digital marketing tools	Johnson et al. (2018), Sivathanu (2018), Ram and Sheth (1989)
	RB2	I fear that I may suffer loss in business if I use digital marketing tools	
	RB3	I fear that I might not able to reach out to my target customers if I use digital marketing tools	
	RB4	I fear that I might not be able to send the right message if I use digital marketing tools	
	RB5	I fear that systemic disorders will happen if I use digital marketing tools	

Psychological Barrier (PB)	PB1	I am more comfortable in doing promotions through traditional media rather than digital media	Johnson et al. (2018), Sivathanu (2018), Ram and Sheth (1989)
	PB2	I am more comfortable in physically interacting with customers rather than through digital platforms	
	PB3	"I have an image that digital marketing is a difficult process"	
	PB4	I do not feel safe sharing business information in digital media	
	PB5	Using digital media for promotion will expose me to hackers	
Adoption Intention	AI1	I will use digital marketing tools in future	Fishbein and Ajzen (1980); Gupta and Arora(2017)
	AI2	I can see myself using digital marketing tools in future	
	AI3	I intend to use digital marketing tools in future	

Appendix – II : Discriminant Validity – Cross Loading

	AI	PB	RB	UB	VB
AI1	**0.786**	0.47	0.454	0.415	0.626
AI2	**0.837**	0.537	0.428	0.558	0.734
AI3	**0.680**	0.476	0.66	0.435	0.456
PB1	0.568	**0.870**	0.546	0.534	0.569
PB2	0.516	**0.825**	0.553	0.514	0.518
PB3	0.56	**0.828**	0.515	0.541	0.489
PB4	0.516	**0.808**	0.506	0.486	0.53
PB5	0.504	**0.824**	0.482	0.453	0.53
RB1	0.501	0.502	**0.812**	0.478	0.44
RB2	0.545	0.528	**0.800**	0.466	0.502
RB3	0.525	0.496	**0.773**	0.419	0.488
RB4	0.548	0.535	**0.839**	0.47	0.477
RB5	0.531	0.478	**0.830**	0.449	0.478
UB1	0.466	0.442	0.428	**0.777**	0.473
UB2	0.496	0.497	0.457	**0.835**	0.454
UB3	0.505	0.529	0.491	**0.838**	0.514
UB4	0.542	0.538	0.478	**0.877**	0.539
UB5	0.539	0.525	0.486	**0.833**	0.537
VB1	0.656	0.533	0.463	0.511	**0.828**
VB2	0.578	0.511	0.437	0.525	**0.786**
VB3	0.615	0.492	0.482	0.41	**0.767**
VB4	0.701	0.542	0.497	0.52	**0.841**
VB5	0.679	0.503	0.512	0.501	**0.844**

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