"EXAMINING THE DETERMINANTS OF FINTECH ADOPTION IN MSMES: AN EMPIRICAL STUDY IN UTTARAKHAND USING THE TECHNOLOGY ACCEPTANCE MODEL"

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Abstract

Purpose: This study seeks to explore the effects of various factors on the mindset and willingness of Micro, Small, and Medium Enterprises (MSMEs) to adopt Fintech solutions through Technology acceptance model.

Methodology: The study uses both primary and secondary data sources and employs the Extended Technology Acceptance Model (TAM) as the theoretical framework. A quantitative research approach is used, and a questionnaire based on TAM constructs is developed. The questionnaire is distributed to 250 registered MSMEs in Uttarakhand using purposive sampling. Data is analyzed using descriptive statistics in SPSS and further testing is done using Smart PLS for construct reliability and validity, discriminant validity, outer loading, and hypothesis testing.

Findings: The study finds that perceived ease of use, perceived benefits, perceived risk and attitude play a significant role in the adoption of fintech among MSMEs in Uttarakhand. The user-friendly nature of fintech contributes to its rapid adoption. Continuous efforts should focus on designing user-friendly interfaces, addressing perceived risks, and emphasizing the benefits to enhance MSMEs' attitudes and intention to use fintech.

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1. INTRODUCTIONS

Technology plays an essential role in the contemporary era, permeating nearly every aspect of our lives. It has fundamentally transformed our methods of communication, work, education, entertainment, and even our approach to societal issues. Technology has automated and

streamlined numerous processes, resulting in increased productivity and efficiency across various industries (Prakash, B., et. al. 2021). Tasks that are repetitive in nature have been taken over by robotics and artificial intelligence (AI), freeing up human resources for more intricate and imaginative endeavors. Technology has also created fresh opportunities for businesses and entrepreneurship. Technology plays a crucial part in the progress and prosperity of Micro, Small, and Medium Enterprises (MSMEs) in India. By bolstering efficiency, expanding market reach, promoting financial inclusion, facilitating supply chain integration, providing market insights, driving innovation, enabling skill development, and reducing expenses, technology empowers MSMEs in India. Embracing technology can empower these enterprises to thrive in a dynamic business landscape while making substantial contributions to India's economic growth. Fintech, an abbreviation for financial technology, pertains to the application of technology for the delivery and improvement of financial services (Yahaya & Ahmad, 2019). It encompasses a broad range of innovative solutions with the aim of improving efficiency, accessibility, and convenience within the financial sector (Puschmann, T. 2017). The introduction of electronic fund transfers (EFTs) and ATMs in the 1960s served as the groundwork for the digitization of financial services. Subsequently, the widespread adoption of the internet in the 1990s brought substantial advancements to fintech, with online banking, electronic payment systems, and online brokerage services gaining popularity. The widespread adoption of smartphones and mobile applications has caused a transformative effect on fintech. Fintech has brought about a revolution in multiple domains of financial services, such as wealth creation, payments, banking, investment, lending, insurance, and wealth management. It leverages advancements in mobile technology, data analytics, artificial intelligence, blockchain, and cloud computing to create fresh opportunities and disrupt traditional financial systems. One key area of fintech lies in digital payments. The emergence of mobile payment apps, digital wallets, and cryptocurrencies has transformed the way individuals and businesses conduct transactions. Fintech companies have facilitated faster, more secure, and more convenient payment methods, reducing reliance on cash and traditional banking channels. Moreover, fintech has democratized access to financial services by utilizing technology to provide financial services to underserved populations, such as the unbanked and underbanked, who previously had limited or no access to banking services. Through mobile banking and digital platforms, individuals can now access basic financial services, make payments, and even access credit and insurance products. Fintech has also disrupted the lending industry by introducing peer-to-peer lending platforms and alternative credit scoring models, which have opened up new avenues for individuals and small businesses to obtain funding outside of traditional banking channels. This has increased competition and expanded credit availability. Furthermore, fintech has revolutionized investment and wealth management by introducing robo-advisors powered by algorithms and artificial intelligence, which provide automated investment advice and portfolio management. This has made investing more accessible and cost-effective for retail investors. Indeed, fintech has led to substantial transformations in the financial industry, leveraging technology and innovation to drive change. Fintech indeed has the merit to play a critical role in supporting the growth and development of MSMEs. It can recast the way MSMEs access financial

services, streamlines processes, and enhances their competitiveness. One major challenge for MSMEs is accessing affordable financing, but fintech platforms introduce innovative lending models that leverage technology and alternative data sources to assess creditworthiness. Fintech lending platforms also simplify the loan application process, provide faster approvals, and offer flexible repayment terms tailored to the needs of MSMEs. Furthermore, fintech enables MSMEs to accept digital payments, expanding their customer base and increasing sales opportunities. Digital payment solutions offer convenience, security, and cost savings compared to traditional cash-based transactions. This enhances financial inclusion and enables more efficient transactions for MSMEs. These enterprises hold great importance in the Indian economy. They are vital contributors to employment generation, economic growth, and fostering entrepreneurship. The Government of India bases its definition of MSMEs on the amount invested in equipment for service businesses as well as on manufacturing plant and machinery. As of July 2020, the classification is as follows:

Manufacturing & Service Sector	MICRO (Rs.)	SMALL (Rs.)	MEDIUM (Rs.)
Investment	Up to 1 crore	More than 1 crore ≤ 10 crores	More than 10 crore ≤ 50 crores
Annual Turnover	Up to 5 crores	More than 5 crore ≤ 50 crores	More than 50 crore ≤ 250 crores

Source: http://www.msme.gov.in/

MSMEs stimulate industrialization by fostering entrepreneurship and decentralized industrial expansion across various sectors, including manufacturing, services, agro-based industries, and more. They often drive innovation and originality within the business landscape, providing a platform for aspiring entrepreneurs to establish their own ventures and contribute to overall economic growth. Additionally, MSMEs contribute significantly to the export sector by manufacturing and supplying goods and services that are in demand globally. by manufacturing and shipping a diverse range of products, such as textiles, handicrafts, engineering goods, pharmaceuticals, and more. By promoting industrial growth in rural and underdeveloped regions, MSMEs also help reduce regional disparities (Kumar, A., et. al. 2009). They encourage grassroots-level entrepreneurship, empowering individuals and communities while fostering inclusive development nationwide. Moreover, MSMEs make significant contributions to poverty alleviation by generating employment opportunities, particularly for marginalized groups in society. They also prioritize skill development and training, equipping individuals with marketable skills and improving their livelihoods. The sustained growth and prosperity of MSMEs in India are fundamental to overall progress and the achievement of inclusive economic progress in the country. The present study aims at investigating the determinants of fintech adoption in MSMEs of Uttarakhand state which is situated in the northern region of India, is characterized by a substantial presence of MSMEs that hold great significance for the state's economy. These

enterprises contribute to employment generation, foster entrepreneurship, and promote industrial growth. According to the Ministry of MSMEs, the state of Uttarakhand had a registered count of over 4.32 lakh (432,000) MSMEs, spanning across diverse sectors such as manufacturing, tourism, agriculture, handicrafts, pharmaceuticals, food processing, and more. To cater to the needs of MSMEs, the state has dedicated industrial estates, hubs, and areas. In Uttarakhand, MSMEs serve as the largest employers, offering significant employment opportunities. The Annual Report 2019-20 by the Ministry of MSMEs states that MSMEs in Uttarakhand employed over 7.6 lakh (760,000) individuals. Additionally, the report highlights that MSMEs contributed approximately 43% to the Gross Value Added (GVA) in the state's manufacturing sector during 2019-20. By nurturing and empowering MSMEs, Uttarakhand aims to stimulate economic development, establish sustainable livelihoods, and improve the overall well-being of its residents. Fintech tools and platforms offer various solutions to streamline MSMEs' business operations. These include digital accounting software, inventory management systems, invoicing platforms, and supply chain finance solutions. By digitizing and automating these processes, MSMEs can reduce administrative burdens, improve efficiency, and make better-informed decisions. Fintech tools also provide advanced financial management capabilities such as budgeting, cash flow forecasting, and real-time analytics. These features empower MSME owners to make data-driven decisions, monitor financial health, and identify areas for improvement. By gaining better visibility into their finances, MSMEs can optimize resource allocation, reduce costs, and maximize profitability. Fintech empowers MSMEs to effectively compete, drive growth, and navigate the evolving landscape of the digital economy. This study seeks to explore the effects of various factors on the mindset and willingness of MSMEs to adopt Fintech solutions through Technology acceptance model. The manuscript is structured into six distinct sections, commencing with an introductory segment that lays the groundwork for the study. Subsequently, a comprehensive review of the relevant literature follows in the second section. The third segment delves into the empirical methodology employed in the research, while the fourth section presents the obtained results. In the fifth part, the findings and limitations of the study are thoroughly examined. Finally, the sixth and concluding section expounds upon the practical implications derived from the research and offers valuable recommendations for further exploration.

2. LITERATURE REVIEW

MSMEs are of immense importance to the economy due to their significant impact on the nation's GDP, employment rates, and export activities (Lokhande, M. A. 2011). In comparison to large corporations, the MSME industry exhibits a higher level of energy and dynamism, particularly when it comes to innovation costs and capital requirements (Zahrah & Wijaya, 2019). However, despite their crucial character in the growth and development of the country, these businesses encounter numerous challenges on a daily basis. Firstly, there is a lack of sufficient financing from the formal sector, which hampers their growth potential. These enterprises also face restricted access to credit for fulfilling their working capital needs and are subjected to mortgage restrictions. Additionally, there is inadequate management of trade receivables and payables, exacerbating their

financial constraints (Maiti, M. 2018). Insufficient public infrastructure, including transportation facilities, further adds to their challenges (Gupta & Pathak, 2017). Furthermore, MSMEs have to contend with fierce competition from large corporations and multinational brands, making it difficult for them to establish a strong market presence. Another hurdle they encounter is the difficulty in recruiting and retaining qualified workers in the local market. Due to their relatively smaller scale of operations, MSMEs struggle to achieve economies of scale, limiting their cost efficiencies. Moreover, a lack of technological innovation poses additional obstacles to their growth and competitiveness. Nevertheless, despite the aforementioned difficulties, the MSME sector has significant potential to devote to the economic prosperity of the nation. This is particularly evident in the hilly state of Uttarakhand, where the endowment of large industrial plants is hindered by geographical and infrastructural factors. Consequently, MSMEs play a crucial role in Uttarakhand's production, job creation and investment. The state offers various advantageous factors to facilitate the establishment and seamless operation of MSME units. Despite being major contributors to the economy, the MSME sector in Uttarakhand still grapples with various issues (Kumar, B., & Gajakosh, A. R. 2021). These challenges encompass aspects such as securing financing, implementing effective marketing strategies, adopting technology and innovation, addressing socio-cultural factors, and developing a skilled workforce tailored to meet their specific requirements.

During the 4.0 industrial era, technology has revolutionized every facet of human existence, becoming an indispensable element in modern life. The impact of technology on the global economy and business landscape cannot be overstated. It has brought about significant changes by automating and streamlining various processes, resulting in heightened productivity and efficiency across diverse industries. Repetitive tasks have been effectively delegated to robotics and artificial intelligence (AI), freeing up human resources to engage in more intricate and imaginative pursuits. Moreover, technology has paved the way for new opportunities in the realm of business and entrepreneurship. In particular, the financial sector has undergone a remarkable transformation with the advent of Fintech, commonly referred to as fintech (Schueffel, P. 2016). Fintech is rapidly evolving and has become one of the far-reaching breakthroughs in the financial industry. It is information technology that serves as the primary catalyst for innovation within this sector (Guild, J. 2017) (Yahaya & Ahmad, 2019). Fintech encompasses a range of segments, including alternative payment systems, lending platforms, application program interfaces, robo-advising, and artificial intelligence. These technologies play a vital role in assisting individuals with their business and financial endeavors. The services offered by fintech are continually advancing, becoming faster and more user-friendly, thereby facilitating seamless interactions within the financial landscape (Muthukannan, P., et. al. 2020).

Given the intensifying competition and evolving dynamics within the business environment, MSMEs must prioritize their focus on technical innovation and modernization (Chaturvedi, P., et. al. 2015), (Singh, D., et. al. 2015). The emergence of the alternative payment ecosystem, facilitated by internet usage, plays a pivotal role in enhancing the operational efficiency of MSMEs and reducing their dependence on traditional cash transactions. Fintech companies offer a diverse array

of additional products and services, including robo-advising, Insurtech, search engines, and comparison websites, among others, which prove immensely advantageous to MSMEs operating in the country (Martinelli, 2021). By leveraging extensive technological innovation, fintech has the potential to make significant contributions to the development and growth of MSMEs. The sector face significant challenges in obtaining loans, particularly when sufficient collateral is not readily available. These small-scale businesses disproportionately bear higher credit risks, making conventional financial institutions hesitant to lend to them. Fintech plays an exceptional role in supporting the expansion of MSMEs by providing them with funding options, aggregating financial products, and facilitating connections with banks and other financial institutions (Goel, P., et. al. 2022) (Winarto, 2020). By offering MSMEs a variety of flexible and cutting-edge credit products, fintech fills the funding gap for small firms. Consequently, Financial Technology instills new hope for the growth and development of MSMEs by overcoming capital constraints, financial challenges, and the cumbersome traditional loan application processes. Fintech provides easily accessible capital, facilitates fast and simplified financial transactions, and offers detailed financial reporting, particularly benefiting MSMEs seeking growth opportunities in the digital era (Gomber et al., 2018). Overall, fintech plays an extensive role in enhancing the performance and efficiency of SMEs (Ardiansyah, 2019). With the help of overall review of available literature, it is being hypotherized that use of fintech have been experiencing high growth of MSMEs in India as well as across the world. Moreover several variables have been extracted from the literature and a conceptual model has been framed (Figure 1).

Figure No. 1: Conceptual Model for The Study
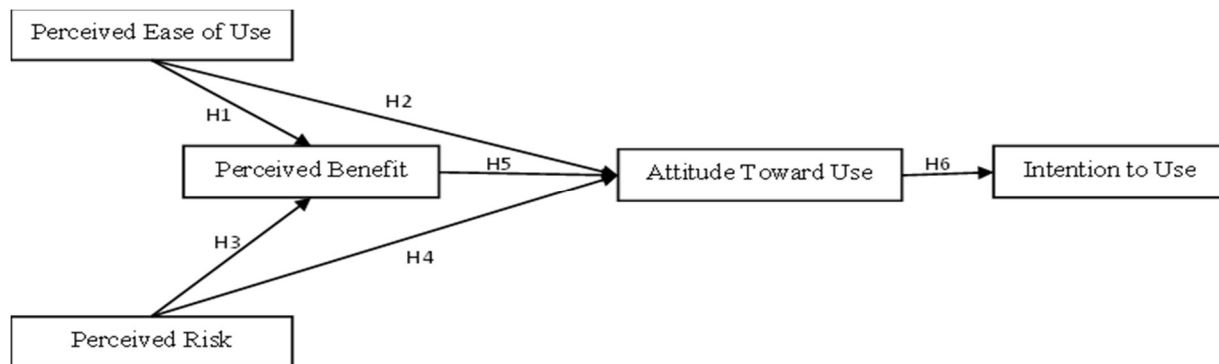
Source: Compiled by author

3. EMPIRICAL METHODOLOGY

The objective of the research article is to investigate the factors that influence MSMEs in their decision to adopt Fintech solutions. The study incorporates both primary and secondary data sources to gather relevant information. The theoretical model tested in this study is the Extended TAM, which provides a comprehensive understanding of the MSMEs' intentions to adopt Fintech. To collect and analyze data, a quantitative research approach is employed. A questionnaire is developed based on the constructs of TAM, including PB, PEU, PR, ATU, and INU. The

questionnaire comprises items that assess these constructs, utilizing a Likert scale for measurement. The data is gathered from 250 registered MSMEs operating in the state of Uttarakhand, employing the purposive sampling technique. The district center website serves as the sampling frame for selecting the participants. The distribution of the questionnaire to the selected MSMEs is carried out through both WhatsApp and personal visits. After gathering the data, it is recorded in a Microsoft Excel spreadsheet and then imported into SPSS for conducting descriptive statistical analysis of the respondents' demographic characteristics Additionally, Smart PLS is employed for further testing, which involves assessing construct reliability and validity, checking discriminant validity, measuring outer loading, and conducting hypothesis testing. Ethical considerations are strictly adhered to throughout the research process. Informed consent is obtained from the participating MSMEs, ensuring that they fully comprehend the study's purpose and their rights as participants. Adequate measures are implemented to secure the confidentiality and protection of the participants' data. TAM is a conceptual framework designed to figure out and interpret how individuals accept and adopt new technologies. Developed by Fred Davis in 1989, TAM has been widely utilized and expanded upon by researchers in various disciplines. It provides a structure for comprehending the factors that influence individuals' recognition and adoption of technology. The model has been extensively employed to investigate the adoption of diverse technologies, including software applications, mobile devices, and online services. According to the TAM, individuals are more inclined to accept and adopt a technology when they realize it as favorable and handy. However, the original model did not consider external factors that could affect technology acceptance. The Extended TAM incorporates additional factors that influence users' acceptance and adoption of technology (Figure 1).

3.1. Perceived Ease of Use (PEU): It extracts users' perception of the level of effort required to learn and utilize a technology. When users perceive a technology as user-friendly, easy to comprehend, and requiring minimal training or technical skills, they are more inclined to accept and adopt it (Venkatesh & Davis, 2000). Factors influencing perceived ease of use include the design of the user interface, simplicity, clarity of instructions or documentation, and the learning curve associated with the technology. Empirically the Perceived benefits and perceived ease of use have significant impact attitude toward Use of technology (Purwantini et al. 2020) (Jerene and Sharma 2020) (Thaker 2018). This study also consider that the anticipated ease of use has a substantial impact on both the perceived benefit and attitude toward use of a technology.
Hypothesis 1 (H1)- PEU has significant influence on the PB among MSMEs toward the use of Fintech.
Hypothesis 2 (H2)- PEU has significant influence on the ATU among MSMEs toward the use of Fintech.

3.2. Perceived risk (PR): It is a significant factor that influences individuals' attitudes and intentions towards technology adoption. It refers to how individuals subjectively assess the potential drawbacks or uncertainties linked to adopting and utilizing a specific technology.

Perceived risk can impact users' attitudes and intentions by increasing uncertainty or anxiety, potentially leading to resistance or hesitancy in adopting the technology (Featherman, M. S., & Pavlou, P. A.2003) (Pavlou, P. A. 2003). This study assumed that the perceived risk has compelling impact on attitude of MSMEs toward the use of fintech. The lower level of risk can also be considered as perceived benefit for MSMEs to use Fintech in their operations.

Hypothesis 3 (H3)- PR has significant influence on the PB among MSMEs toward the use of Fintech.

Hypothesis 4 (H4)- PR has significant influence on the ATU among MSMEs toward the use of Fintech.

3.3. Perceived benefits (PB) involve users' subjective assessment of how a technology will boost their job performance or streamline their efforts. Users are more prone to accept and adopt a technology if they perceive it as useful and believe it will bring advantages or benefits to their work or personal life (Davis, 1989). Factors influencing perceived benefits include the functionality, features, efficiency, effectiveness, and problem-solving capabilities of the technology. It is empirically proven that consumer's view of increased usefulness of product and service will result in increased attitude toward the use of product and service (Jerene and Sharma 2020), and (Majid 2021). This study also took into account that a higher perception of benefits will have impact on the attitude of MSMEs regarding the utilization of fintech.

Hypothesis 5 (H5)- PB has significant influence on the ATU among MSMEs toward the use of Fintech.

3.4. Attitude toward use (ATU) represents users' overall positive or negative feelings and evaluation of a technology. Users who hold a positive attitude are more inclined to adopt and utilize the technology, while those with a negative attitude are less inclined to do so (Chau, P. Y. 1996) (Pavlou, P. A. 2003). Attitude is influenced by PB, PEOU, and PR, with higher perceived benefits, ease of use, and lower perceived risk contributing to a more positive attitude. The study considered that positive attitude of MSMEs toward the use of fintech will result in strong intention to use and adopt the technology by the sector.

Hypothesis 6 (H6)- ATU has significant influence on the INU among MSMEs toward the use of Fintech.

3.5. Intention to use (INU) refers to users' plans or intentions to adopt and use a technology in the future, it is a crucial construct in understanding users' behavior and predicting their actual usage of the technology. Users with a stronger intention are more assuring to actually adopt and use the technology, while those with a weaker intention are less likely to do so (Chau, P. Y. 1996) (Pavlou, P. A. 2003). The user's attitude toward using the technology strongly influences their intention to adopt it.

4. RESULTS

The study consisted of a sample size of 250 respondents, and the demographic data of these participants is presented in Table 2. The demographic analysis reveals that within the MSMEs included in the study, the majority of ownership (74.4%) is held by males, while the remaining 25.6% are owned by females. In terms of age distribution, a mixed trend is observed among the respondents. Approximately equal proportions of respondents fall within the age groups of 25-31 years (26.45%), 32-38 years (24.8%), and 39-45 years (24%). Regarding the educational background of the participants, the largest proportion (46.8%) of respondents indicated having an undergraduate degree. Furthermore, the table also provides insights into the awareness levels of the respondents regarding the application and benefits of Fintech. The responses indicate that 100% of the MSME owners are aware of the digital payment services offered by Fintech. Following that, 78.8% of the respondents are aware of the financing services catered by Fintech. However, when it comes to digital bookkeeping and accounting services, only 62.8% of the respondent's indicated awareness.

Table No. 2 : Descriptive Statistics of Respondents

Demographic Factor	Min.	Max.	Mean	N	Percentage
Gender of the Respondents	1	2	1.24	250	100.0%
Male				190	76.0%
Female				60	24.0%
Age of the Respondents	1	5	3.04	250	100.0%
18-24 years				27	10.8%
25-31 years				66	26.4%
32-38 years				62	24.8%
39-45years				60	24.0%
above 45				35	14.0%
Education of the Respondents	1	5	3.66	250	100.0%
Below 10th				12	4.8%
10th				22	8.8%
12th				53	21.2%
under graduate				116	46.4%
Post graduate				47	18.8%
Are you aware about benefits of using digital financial services?	1	2	1.02	250	100.0%
Yes				244	97.6%
No				6	2.4%
Are you aware about digital payment platforms?	1	1	1.00	250	100.0%
Yes				250	100.0%

No				0	0.0%
Are you aware about digital Financing platforms?	1	2	1.21	250	100.0%
Yes				197	78.8%
No				53	21.2%
Are you aware about digital book keeping and accounting?	1	2	1.37	250	100.0%
Yes				157	62.8%
No				93	37.2%

Source: Compiled by author through SPSS

After analyzing next the Outer loading calculated which is a statistical measure used in structural equation modeling (SEM) to quantify the association between the detected indicators and their underlying latent constructs. Outer loading is typically represented by path coefficients or factor loadings, which indicate reveal the magnitude and direction of the association between an observed measure and its corresponding latent construct. The values of outer loadings range from -1 to +1. Higher absolute values of the outer loading indicate a stronger association between the observed indicator and the latent construct. Generally, outer loadings above 0.7 are considered significant. Table 2 provides clear and evident information that each indicator has the outer loading value of more than 0.8, which clarifies that all the construct indicates a strong and positive association between the observed indicators and relative latent variables.

Table No. 3 : Outer loading and Construct Reliability

Construct	Indicators	Outer Loading	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Perceived Ease of Use (PEU)	PEU1	0.883	0.932	0.948	0.786
	PEU2	0.856			
	PEU3	0.899			
	PEU4	0.903			
	PEU5	0.891			
Perceived Risk (PR)	PR1	0.892	0.938	0.954	0.776
	PR2	0.882			
	PR3	0.833			
	PR4	0.908			
	PR5	0.915			
Perceived Benefit (PB)	PB1	0.921	0.942	0.956	0.813
	PB2	0.890			
	PB3	0.914			
	PB4	0.890			

	PB5	0.895			
Attitude Toward Use (ATU)	AT1	0.894	0.920	0.944	0.807
	AT2	0.909			
	AT3	0.898			
	AT4	0.891			
Intention to Use (INU)	IN1	0.902	0.924	0.946	0.815
	IN2	0.889			
	IN3	0.919			
	IN4	0.902			

Source: Compiled by author through Smart PLS SEM

Construct reliability is the next assessment which refers to the assessment of the internal consistency and reliability of the latent constructs in a structural equation model (SEM). It is a measure of how consistently the observed indicators capture the underlying construct. In this study the construct reliability is measured through three different criteria which includes: First the Cronbach's Alpha criterion which evaluates the level of interrelatedness among observed indicators and their alignment with the underlying construct they measure. Higher values of Cronbach's Alpha indicate stronger reliability, the values above 0.7 generally considered satisfactory. Here all the constructs have value of more than 0.9 which indicates the strong reliability of the data collected. The second criterion is composite reliability which is figured as the ratio of the sum of the squared loadings of the indicators on their construct to the sum of the squared loadings and the residual variances. CR values above 0.7 are typically considered satisfactory. Here again the value of composite reliability is also more than 0.9 (Table no. 3) for all the construct thus this criterion is also satisfied for the collected data. Lastly Average Variance Extracted (AVE) criterion is used which measures the amount of variance hooked by the latent construct corresponding to the measurement error. It is calculated as the average of the squared loadings of the indicators on their construct. AVE values above 0.5 are generally considered desirable, indicating that the construct demonstrate a substantial portion of the variance in its indicators. The Table no. 3 shows that AVE for PEU, and PR is more than 0.7 and PB, ATU and INU the value is more than 0.8 which depicts that the collected data also satisfied the AVE Criterion of construct reliability. Thus, we can conclude that the constructs used in this research have significant reliability. After satisfying the construct reliability next the discriminant validity is measured. It refers to the competence of a measurement model to differentiate between different latent constructs. It assesses whether the observed indicators of one construct are distinct from the observed indicators of other constructs in the model. The study uses two criteria for analyzing the discriminant validity. First the Fornell – Larcker Criterion which contrast the square root of the AVE of each construct with the correlations between that construct and other constructs in the model. According to the Fornell-Larcker criterion, the square root of the AVE of each construct should be greater than the correlation between that construct and any other construct in the model.

It can be evident from the Table No. 4 that each column has maximum value at top, which indicates that each construct has maximum correlation with itself only thus the Fornell- Larcker criterion shows the acceptable discriminant validity of all the construct identified.

Table No. 4: Fornell-Larcker Approach for Discriminant Validity

	PEU	PR	PB	ATU	INU
PEU	0.886	-	-	-	-
PR	0.511	0.887	-	-	-
PB	0.756	0.577	0.902	-	-
ATU	0.703	0.564	0.781	0.898	-
INU	0.754	0.614	0.748	0.781	0.903

Source: Compiled by author through Smart PLS SEM

The second criterion used for assessing the discriminant validity is Heterotrait-Monotrait (HTMT) Ratio of Correlations which compares the correlations between different constructs with the correlations within the same construct. It examines whether the correlations between different constructs are smaller than the correlations within a single construct. If the HTMT ratio is below a threshold of 0.85 (commonly used), it indicates discriminant validity. It is evident from the Table No. 5 that the HTMT value of each construct is less than 0.85. Thus, all the construct has acceptable discriminant validity.

Table No. 5: HTMT Approach for Discriminant Validity

	PEU	PR	PB	ATU
PEU	-	-	-	-
PR	0.546	-	-	-
PB	0.806	0.613	-	-
ATU	0.758	0.606	0.837	-
INU	0.811	0.661	0.801	0.845

Source: Compiled by author through Smart PLS SEM

The structural model assessment is done with boot strapping function in PLS SEM to analyze the result and test the hypothesis with 5000 number and the result of analysis shown that on basis of Table no. 6, all the hypothesis are accepted as the 'T-value' is 11.775, 9.507, 4.366, 4.147, 19.550 and 25.378 for the hypotheses H1, H2, H3, H4, H5 and H6 respectively which more the 1.96. also, the 'P-value' for all the hypotheses is 0.000 which is less the 0.005. thus, with thumb rule of 'T-value; and 'P-value' all the hypothesis formed for the study are accepted.

Table No. 6: Summary of Hypotheses Test

Hypotheses		(O)	(|O/STDEV|)	P Values	Status
H1	Perceived Ease of Use -> Perceived Benefits	0.625	11.775	0.000	*Accepted*

H2	Perceived Ease of Use -> Attitude toward use	0.240	9.507	0.000	*Accepted*
H3	Perceived Risk -> Perceived Benefits	0.256	4.366	0.000	*Accepted*
H4	Perceived Risk -> Attitude toward use	0.146	4.147	0.000	*Accepted*
H5	Perceived Benefits -> Attitude toward use	0.515	19.55	0.000	*Accepted*
H6	Attitude toward use -> Intension to Use	0.781	25.378	0.000	*Accepted*

Source: Compiled by author through Smart PLS SEM

Figure 2 represents the structural model showing the outer loading of all the indicator along with path coefficient value and R-square value of all the constructs.

Figure No. 2: Path Diagram
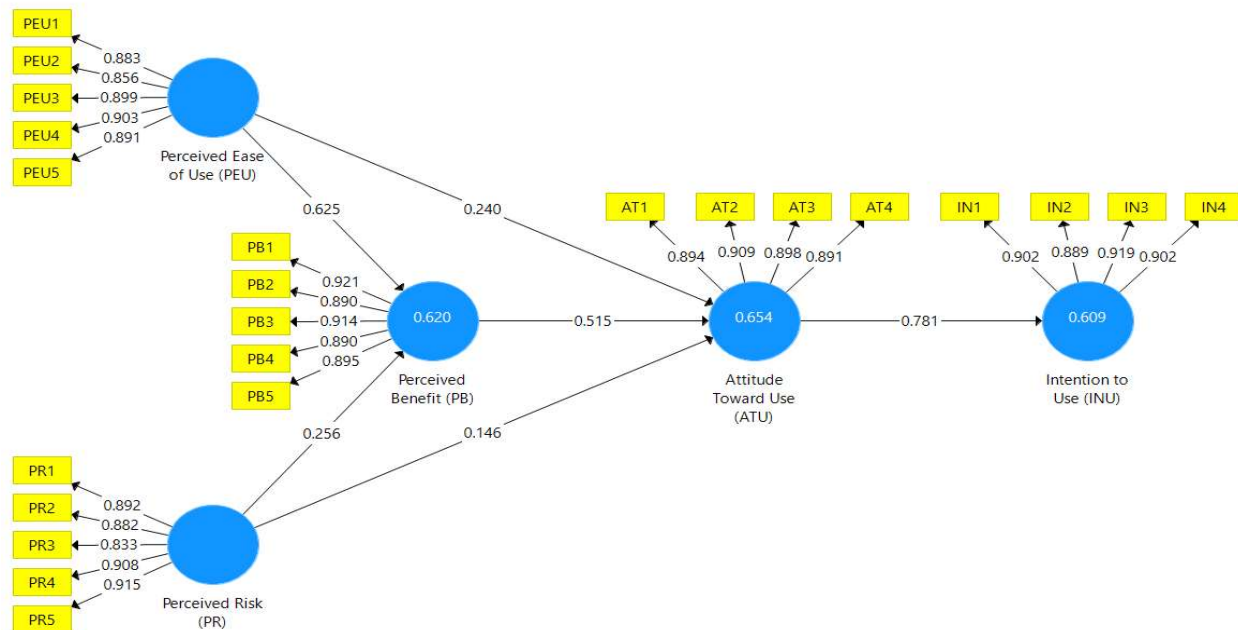
Source: Compiled by author through Smart PLS SEM

The study also conducted the test for goodness of fit to validate the model. Three different criteria were used for testing the model fitness. Firstly the 'Standard root mean square residual'(SRMR) calculated which is having the value of 0.04 which less than the standardized threshold limit of 0.14 (Henseler, J., & Sarstedt, M. 2013). thus, this criterion of goodness of fit is satisfied in the study. Second the chi-square value is calculated which is 490.222 which is also greater than the threshold limit of 0.05. and finally, the 'Normated fit index' (NFI) is calculated which shown the

value of 0.915 which is greater than threshold limit of 0.90 (Hu, L. T., & Bentler, P. M. 1999). these results have validated the model's goodness of fit which can be seen from Table 7.

Table No. 7: Test for Model's Goodness of Fit

SRMR	**0.04**
Chi-Square	**490.222**
NFI	**0.915**

Source: Compiled by author through Smart PLS SEM

Table no. 8 depicts the R-squared and adjusted R-squared values for three dependent variables. R-square is a statistical mechanism that represents the proportion of the variance in the dependent variable that can be explained by the independent variable (Hair, J. F et. al. 2011). Here the R-square values range from 0.609 to 0.654, indicating that approximately 60.9% to 65.4% of the variation in the dependent variables (Perceived Benefit, Attitude toward Use, and Intention to Use) can be explained by the respective independent variables of the model. The results are indicating that a moderate level of relationship between the Variables, thus making the construct moderate-high fit.

Table No. 8: R-Square (R^2) Test Result

	R Square	R Square Adjusted
Perceived Benefit	0.620	0.618
Attitude toward Use	0.654	0.608
Intention to Use	0.609	0.608

Source: Compiled by author through Smart PLS SEM

5. FINDINGS AND LIMITATIONS

The analysis conducted reveals valuable insights into the rapport between perceived ease of use, perceived benefits, attitude, and the adoption of Fintech among MSMEs in Uttarakhand. It is statistically evident that MSMEs perceive a positive and significant association between the ease of using fintech, the benefits they perceive, and their overall attitude towards its adoption (Darmansyah et al. 2020). MSMEs in Uttarakhand generally perceive fintech as an easily accessible and convenient solution due to its streamlined and user-friendly procedures. This perception fosters a positive attitude towards fintech among MSMEs, leading to increased adoption rates (Majid, R., & Nugraha, R. A. 2022). Fintech's user-friendly nature and minimal interaction effort contribute to its rapid adoption throughout the region. The analysis further uncovers a significant positive relationship between perceived risks, perceived benefits, and attitude towards fintech usage. MSMEs that perceive fewer risks associated with adopting financial technology tend to acknowledge more benefits from its usage. Consequently, they develop a favorable attitude towards fintech and are more inclined to adopt it in their business operations (Darmansyah et al. 2020). Therefore, addressing and mitigating perceived risks play a vital role in fostering positive

attitudes and increasing MSMEs' acceptance of fintech. Moreover, the analysis highlights a positive relationship between perceived benefits and attitude towards fintech adoption. When MSMEs perceive numerous advantages associated with fintech, they are more viable to develop a positive attitude towards its usage (Majid, R., & Mawaddah, H. 2022). The major benefits observed by MSMEs include speedy transactions, convenient usage, a secure financial environment, and lower costs. These benefits greatly contribute to the widespread adoption of fintech within the MSME sector in Uttarakhand. Furthermore, the results demonstrate a statistically significant positive relationship between attitude towards use and intention to use fintech. If MSMEs hold a favorable attitude towards a particular fintech system, they are more inclined to show an intention to use it (Majid, R. 2021). This highlights the importance of cultivating positive user experiences and perceptions to drive MSME adoption and engagement with fintech. Overall, the analysis emphasizes the crucial role played by PEU, PR, PB, and ATU toward fintech adoption among MSMEs in Uttarakhand. To enhance MSMEs' attitudes and increase their intention to use fintech innovations, continuous efforts should be made in designing user-friendly interfaces, addressing and mitigating perceived risks, and effectively highlighting the benefits associated with fintech usage. The study sample size consists of 250 registered MSMEs in Uttarakhand, which may restrict the applicability of the findings to a larger population of MSMEs. Taking larger sample can bring more clarity in representing the diversity and heterogeneity of the sector. Due to time constraints the study focuses on perceived ease of use, perceived benefits, perceived risk, and attitude as factors influencing fintech adoption among MSMEs, there may be other important factors not considered in the research. For instance, organizational factors, external pressures, and contextual variables could play a role in MSMEs' decision-making processes regarding fintech adoption. The study focuses specifically on MSMEs in Uttarakhand, which may have unique characteristics and contextual factors that differ from other regions especially those states & region which have different kind of infrastructural facilities. Additionally, to obtain a more comprehensive comprehension of the adoption process, alternative theoretical frameworks or models could have been taken into consideration. The article aimed to investigate the factors affecting the mindset and willingness of MSMEs to adopt Fintech solutions using the Technology Acceptance Model. Through a quantitative research approach and the utilization of primary and secondary data sources, the study provided valuable observation into the adoption of fintech among MSMEs in Uttarakhand. The study's results suggest that multiple factors have a notable impact on the adoption of fintech among MSMEs. PEU, PR, PB, and ATU were identified as key determinants in the decision-making process of MSMEs. The study highlights the importance of understanding the factors that influence MSMEs' adoption of fintech solutions. By addressing these factors and designing effective strategies to promote adoption, policymakers, financial institutions, and other stakeholders can foster the integration of fintech into MSMEs' operations, enabling them to leverage the benefits of technology in their business processes. Additionally, efforts should focus on promoting a positive attitude towards fintech adoption among MSMEs through awareness campaigns and educational programs.

6. PRACTICAL IMPLICATIONS AND RECOMMENDATIONS

The study suggests that fintech providers should effectively communicate the advantages and benefits of their solutions to MSMEs in order to encourage adoption. Fintech providers can achieve this by showcasing how their technologies can streamline operations, improve efficiency, lower costs, and provide access to new financial services and opportunities. By highlighting these benefits, MSMEs are more likely to develop positive attitudes towards adopting fintech. Fintech providers can also support MSMEs by offering resources, workshops, and training programs that familiarize them with the functionalities and advantages of their fintech solutions. This approach helps build confidence and competence among MSMEs, ultimately increasing their intention to adopt fintech. In order to enhance fintech adoption among MSMEs, collaboration among fintech providers, industry associations, and government agencies is crucial. By establishing partnerships, these stakeholders can exchange knowledge and resources, raise awareness, provide education about fintech, and create an environment that is conducive to adoption. This collaborative effort can address barriers and challenges that MSMEs may face in adopting fintech solutions. The study serves as a foundation for future research on fintech adoption among MSMEs. Subsequent studies can explore additional factors that influence adoption, such as organizational culture, external pressures, and contextual factors specific to different industries or regions. Furthermore, researchers can investigate the long-term impacts of fintech adoption on MSMEs' performance, growth, and competitiveness. Such research can provide valuable insights for policymakers and scholars seeking to understand the broader implications and benefits of fintech adoption in the MSME sector. The study did not give consideration to the factors like age, gender and educational background which can also be used as moderating variable to analyze the intentions of different groups toward adoption of fintech. Also, categorical classification of MSMEs according to threshold limit of government can also be used as one factor while considering the intension of this sector toward adoption of fintech.

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