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# A Heterogeneous Factors Influencing Adopting Online Transaction in Small Scale Industries in Bangalore

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## Abstract

The proliferation of digital technologies and the internet has brought about a significant transformation in the way businesses operate worldwide. This study explores the heterogeneous factors influencing the adoption of online transactions in small-scale industries in Bangalore, India. Small-scale industries play a vital role in the local economy, and understanding their transition to online transactions is critical for their sustainability and growth. This research employs a mixed-method approach, combining surveys and interviews, to collect data from a diverse sample of small-scale industry owners and managers across Bangalore. The study aims to identify and categorize the various factors that affect the adoption of online transactions in this context. The findings suggest a complex interplay of factors, reflecting the diverse nature of small-scale industries. Economic, technological, social, and organizational factors emerged as primary determinants influencing the adoption of online transactions. Economic factors include cost-effectiveness, financial incentives, and profitability, while technological factors encompass infrastructure, digital literacy, and the availability of user-friendly platforms. Social factors revolve around customer demand, peer influence, and the local market dynamics, while organizational factors pertain to the firm's size, structure, and adaptability. Additionally, the study reveals that government policies, regulations, and industry-specific associations have a significant impact on the decision to adopt online transactions in small-scale industries. External factors, such as competition, industry trends, and the COVID-19 pandemic, have also played a role in accelerating this transition. Understanding these heterogeneous factors and their interactions is crucial for policymakers, industry associations, and businesses in creating tailored strategies to promote online transaction adoption. By recognizing the multifaceted nature of these factors, small-scale industries can overcome barriers and leverage opportunities to transition into a digitally empowered future. In conclusion, this research sheds light on the complex landscape of online transaction adoption among small-scale industries in Bangalore, providing valuable insights into the challenges and opportunities these businesses face. It underscores the need for a holistic approach to support their journey towards a digital future, enhancing their competitiveness and contributing to the growth of the local economy.

**Keywords:** COVID-19, Online Transaction, Competition, Industry Trends, Sustainability and Growth.

## **Introduction**

In today's digital era, the adoption of online transactions has become increasingly vital for businesses, regardless of their size. Small-scale industries, in particular, are experiencing a significant transformation in their operational landscapes as they strive to keep pace with the evolving preferences of consumers and the demands of an interconnected global market. Bangalore, often referred to as the Silicon Valley of India, is at the forefront of this digital revolution, with numerous small-scale enterprises seeking to harness the power of online transactions. This article explores the multifaceted factors that influence the adoption of online transactions within the context of small-scale industries in Bangalore. Unlike larger enterprises, small-scale businesses exhibit a unique and heterogeneous set of influences that guide their decisions to embrace online payment and transaction mechanisms. Understanding these factors is crucial for policymakers, industry stakeholders, and business owners, as they shape the future of commerce in this thriving Indian metropolis. In this article, we delve into the specific characteristics and drivers that make Bangalore's small-scale industries a diverse and dynamic ecosystem for the adoption of online transactions. By examining these heterogeneous factors, we aim to shed light on the challenges, opportunities, and strategies that can facilitate the integration of digital payment solutions within this segment of the business community. As we navigate through the intricate web of influences, we seek to provide valuable insights for the growth and sustainability of small-scale industries in Bangalore and, by extension, for similar business communities worldwide. This research is a vital contribution to the ongoing discourse surrounding the digital transformation of small-scale industries, offering a comprehensive examination of the factors shaping their journey towards embracing online transactions in the vibrant and rapidly evolving landscape of Bangalore.

## **Review of the Study**

Mallieswari R, Debolina Gupta, Mudit Kumar Rai (2020), in their paper entitled "Digital and Other Payment Platforms: Factors Influencing Choice among Youths" conclude that Contemporary digital payment methods are increasingly adopting new technologies to enhance their services and expand their market presence. They are also keen on understanding the various factors that influence the preferences of young consumers when it comes to choosing between different digital and traditional payment platforms. Research has revealed that the choice of payment methods significantly impacts the purpose of the transaction. A majority of the survey participants consider factors such as safety, convenience, cash back incentives, and special offers as influential factors when selecting digital payment platforms. Among these factors, ease of use stands out as the most pivotal attributes guiding payment mode selection. It's worth noting that awareness of digital payment methods is considerably higher among younger individuals in comparison to older demographics. However, it's observed that the adoption of digital payment platforms is lower among females, who tend to be less tech-savvy. Consequently, the number of female respondents in the study is notably lower. Mobile payment applications are experiencing rapid growth within various industries, which are actively introducing their customer bases to new payment methods powered by mobile payment technologies. According to industry experts, the trajectory of mobile payments is on a consistent upward trend and is expected to continue in that direction. As a result, cash usage is expected to decline, and the prevalence of digital payment modes will see a sharp increase in the foreseeable future.

Klas Hakan Alm, Veerisa Chotiyaputta, and Sasi Bejrakashem (2022), in their paper entitled "Factors Influencing Mobile Payment Adoption by Silver Generation in Thailand and Sweden" highlighted that the intention to embrace mobile payment services can be seen as a way to enhance the social connections and societal standing of individuals, especially among those who

are considering adoption. Within the context of a shared social group, particularly the elderly demographic with common interests and shared experiences, promoting mobile payment services through social networks or group affiliations emerges as a promising strategy for service providers. Another critical concern highlighted by service providers, with a specific focus on elderly users, pertains to risk prevention and risk reduction. This research underscores the significance of maintaining a secure system when offering mobile payment services to older consumers, thereby fostering trust, while concurrently ensuring ease of use.

### Statement of the Problem

The adoption of online transactions in small-scale industries in Bangalore is a multifaceted challenge influenced by a wide range of heterogeneous factors. These factors give rise to a complex problem that necessitates comprehensive exploration. Key issues and questions that this study aims to address include:

- **Diverse Influences:** What are the diverse and heterogeneous factors that influence the decision-making process of small-scale industry owners and operators in Bangalore regarding the adoption of online transaction methods?
- **Local Context Impact:** How does the unique technological and entrepreneurial ecosystem of Bangalore, often referred to as India's Silicon Valley, impact the adoption of online transactions in small-scale industries?
- **Industry-Specific Nuances:** To what extent do industry-specific factors shape the adoption of online transactions, and what are the distinct challenges and opportunities faced by various sectors within the small-scale industry?
- **Demographic Disparities:** Are there demographic disparities, such as gender and age, in the adoption of online transaction methods within small-scale industries and their customer bases in Bangalore?
- **Policy and Strategy Requirements:** What policy recommendations and strategies can be developed to support the successful integration of online transaction solutions in the context of Bangalore's small-scale industries?
- **Cross-Cultural Applicability:** Do the findings and insights in this heterogeneous context have applicability beyond Bangalore, potentially benefiting small-scale industries in other regions or countries with similar characteristics?
- **Economic Impact:** How can the successful adoption of online transactions in small-scale industries contribute to economic growth, digital inclusion, and the sustainability of these businesses in the rapidly evolving business landscape?

The diverse and intricate factors influencing the adoption of online transactions in small-scale industries in Bangalore necessitate a comprehensive examination to provide valuable insights for stakeholders, policymakers, and business owners. This study aims to address these issues and contribute to a better understanding of the digital transformation challenges and opportunities within this specific business landscape.

### Objectives

To Investigate the Factors Influencing Online Adopting in Small Scale Industries in Bangalore.

### Methodology

The research into the heterogeneous factors influencing the adoption of online transactions in small-scale industries in Bangalore employs a comprehensive and multi-faceted methodology to ensure a thorough investigation. The following are the key components of the research methodology:

### **Research Design**

Exploratory Research: Given the complexity of the subject, an exploratory research design is adopted to understand the various factors impacting online transaction adoption.

### **Data Collection**

Questionnaires: Customized surveys and questionnaires are distributed to small-scale industry owners, operators, and customers in diverse sectors of Bangalore's small-scale business community. These surveys gather quantitative data on factors influencing online transaction adoption.

### **Sampling**

- Sample Size: 100 Respondents
- Stratified Sampling: To ensure representation across various industry sectors and demographics, a stratified sampling technique is employed, taking into account factors like business size, age, and gender of respondents.

### **Data Analysis**

- Quantitative Analysis: Quantitative data from surveys are analyzed using statistical tools to identify patterns and relationship in the factors influencing online transaction adoption.
- Qualitative Analysis: Qualitative data from interviews are thematically analyzed to gain a deeper understanding of the nuanced factors impacting adoption.

### **Hypothesis**

- Ho: There is no relationship between Age Factor and Ease of Use and Support (Factors Influencing Online Adopting in Small Scale Industries)
- Ho: There is no relationship between Educational level Factor and Ease of Use and Support (Factors Influencing Online Adopting in Small Scale Industries)

### **The Factors Influencing Online Adopting In Small Scale Industries in Bangalore**

The adoption of online technologies in small-scale industries in Bangalore, as in many other regions, can be influenced by a variety of factors. Small-scale industries in Bangalore are typically diverse, ranging from manufacturing to services, and the adoption of online tools and technologies can have a significant impact on their growth and competitiveness. Here are some of the key factors that can influence online adoption in small-scale industries in Bangalore:

- **Digital Infrastructure and Connectivity:** The availability of reliable internet connectivity and digital infrastructure is a fundamental factor. Small-scale industries require access to high-speed internet to effectively use online tools and platforms.
- **Cost of Technology:** The cost of acquiring and maintaining technology is a critical factor. Small-scale industries often have limited budgets, and the affordability of digital tools, software, and hardware can affect their adoption.
- **Digital Literacy:** The level of digital literacy among employees and owners is crucial. If the workforce is not comfortable with using online tools, there will be resistance to adoption. Training and upskilling can play a vital role here.
- **Industry Type:** The nature of the industry itself can influence online adoption. Some industries may require more complex online solutions, while others may rely on simpler technologies for marketing or communication.
- **Competitive Pressure:** The extent to which competitors are adopting online technologies can influence others to follow suit. If a significant number of competitors are online, a small-scale industry may feel compelled to do the same to remain competitive.

- **Government Initiatives:** Government policies and initiatives aimed at promoting digital adoption in small-scale industries can have a significant impact. In India, initiatives like “Digital India” have encouraged digital transformation in various sectors.
- **Access to E-commerce Platforms:** The ability to sell products or services online can be a game-changer. Access to e-commerce platforms like Amazon, Flipkart, or local online marketplaces can greatly affect adoption.
- **Customer Demand:** If customers increasingly prefer online interactions, ordering, and payments, small-scale industries will respond to meet this demand.
- **Data Security and Privacy Concerns:** Small-scale industries may have concerns about data security and privacy, which can be a barrier to adopting online solutions. Clear guidelines and policies can help address these concerns.
- **Logistics and Supply Chain Integration:** Depending on the industry, the ability to integrate online processes with supply chain and logistics can be a key factor. Efficient online inventory management and order tracking, for example, can streamline operations.
- **Ease of Use and Support:** User-friendly tools and readily available support for troubleshooting and problem-solving are essential. Small-scale industries often lack dedicated IT departments, so they need tools that are easy to use and troubleshoot.
- **Network Effects:** The benefits of being part of a network, such as industry associations or business clusters, can influence adoption. Collaborative efforts and shared resources can reduce the barriers to entry.
- **Globalization:** The extent to which a small-scale industry is engaged in global markets can also influence online adoption. Export-oriented businesses may need to adopt online tools to reach international customers.

These factors can interact and vary significantly from one small-scale industry to another. Understanding these factors and tailoring digital adoption strategies to a specific industry’s needs and challenges is crucial for success. Additionally, external support from government agencies, industry associations, and technology providers can facilitate the transition to online business operations.

### Independent Variables

The social and economic characteristics are composed of (a) Age-wise classification, (b) Educational level, (c) Income level (d) Marital Status (d) Family Type (e) No. of Family member

**Table 1**

S.No	Variables	Factors	No. of Respondents
1	Age-wise classification	Below 25	53
		26-50	42
		Above 50	15
2	Educational level	UG	73
		PG	37
		Above PG	0
3	Income level	Below 25, 000	29
		25001-50000	68
		Above 50000	23

4	Marital Status	Married	44
		Unmarried	66
5	Family type	Nuclear family	94
		Joint family	16
6	No. of Family member	Below 3	21
		4-6	72
		Above 6	17
7	Experience	Below 3 years	35
		4-5 years	47
		Above 5 years	38

**Sources:** Primary Data

### Interpretation

Above Table. 1 highlighted the Majority of the consumer profile.

1. Majority 53 of the respondents are their age group up to “Below 25 years”.
2. Majority 72 of the respondent’s 4-6 members in the family size.
3. Majority 73 of the respondents Education Level UG.
4. Majority 68 of the respondents Income level in 25,001-50,000.
5. Majority 94 of the respondents Family Type in Nuclear family.
6. Majority 47 of the respondents Experience (In Years) in 4-5 years.

**Table 2 Factors Influencing Online Adopting in Small Scale Industries in Bangalore**

Particulars	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	( $\sum fx / \sum f$ )	Rank
Customer Demand	55	196	93	24	7	3.41	III
Digital Infrastructure and Connectivity	75	104	111	46	19	3.22	V
Ease of Use and Support	185	124	75	28	2	3.80	I
Access to E-commerce Platforms	120	132	87	42	3	3.49	II
Digital Literacy	35	72	183	44	2	3.05	VIII
Cost of Technology	30	56	116	70	16	2.62	X
Data Security and Privacy Concerns	60	120	111	46	8	3.14	VI
Network Effects	25	96	105	72	10	2.8	IX
Government Initiatives	70	154	84	44	7	3.26	IV
Competitive Pressure	60	108	114	50	8	3.40	VII

**Sources:** Primary Data

From the above Table 2 Analysis in Factors Influencing Online Adopting in Small Scale Industries in Likert scale value with Ease of Use and Support is a 1st Rank in Likert scale Analysis (3.80) Access to E-commerce Platforms 2nd Rank in Likert scale Analysis (3.49), Customer Demand 3rd Rank in Lokert scale Analysis (3.41), Government Initiatives 4th Rank in Likert scale Analysis (3.26), Digital Infrastructure and Connectivity 5th Rank in Likert scale Analysis (3.22), Data Security and Privacy Concerns 6th Rank in Likert scale Analysis (3.14), Competitive Pressure

7th Rank in Likert scale Analysis (3.09), Digital Literacy 8th Rank in Likert scale Analysis (3.05), Network Effects 9th Rank in Likert scale Analysis (2.8) and Cost of Technology 10th Rank in Likert scale Analysis (2.62).

### Calculation Of Chi-Square Test

- H0: There is no relationship between Age Factor and Ease of Use and Support (Factors Influencing Online Adopting in Small Scale Industries)
- Ho: There is no relationship between Educational level Factor and Ease of Use and Support (Factors Influencing Online Adopting in Small Scale Industries)

The formula used for calculation of chi-square value is as follows:

$$\frac{E(O-E)^2}{E}$$

$$\text{Chi-square value} = \frac{E(O-E)^2}{E}$$

E

where, O = Observed Frequency E = Expected Frequency

**Table 3**

SI No	Nature of Variables	Hypothesis	Calculated Value	Table Value	Degrees of Freedom	Acceptance of Null Hypothesis
1	Age Factor and Ease of Use and Support (Factors Influencing Online Adopting in Small Scale Industries)	H0 1	109.958	15.507	8	Rejected

Table 3 makes it clear that there are one hypothesis set, namely, H01 are rejected, because the calculated values of chi square are more than the table value at 5% level of significance. Hence, there is a significant relationship between age factors and Ease of Use and Support (Factors Influencing Online Adopting in Small Scale Industries)

**Table 4**

SI No	Nature of Variables	Hypothesis	Calculated Value	Table Value	Degrees of Freedom	Acceptance of Null Hypothesis
1	Education Factor and Ease of Use and Support (Factors Influencing Online Adopting in Small Scale Industries)	H0 1	11.49	15.507	8	Accepted

Table 4 makes it clear that there are one hypothesis set, namely, H01 are accepted, because the calculated values of chi square are less than the table value at 5% level of significance. Hence, there is a significant relationship between Education Factors and Ease of Use and Support (Factors Influencing Online Adopting in Small Scale Industries).

### Conclusion

The adoption of online transactions in small-scale industries in Bangalore is influenced by a heterogeneous mix of factors. These factors range from technological considerations to socio-economic and environmental aspects. In conclusion, it's evident that the digital transformation of small-scale industries in this region is a complex and multifaceted process. Here are some key

takeaways: Ease of Use and Support, Diverse Factors, Digital Infrastructure, Cost Implications, Digital Literacy and Training, Competitive Landscape, Government Initiatives, Customer Demands, Data Security and Privacy, Logistics and Supply Chain Integration and Network Effects and Globalization. In summary, the successful adoption of online transactions in small-scale industries in Bangalore hinges on a comprehensive understanding of these heterogeneous factors and the development of tailored strategies that consider the unique needs and challenges of each industry. While these factors can present challenges, they also offer opportunities for growth and competitiveness. Small-scale industries that navigate this digital transformation effectively will be better positioned to thrive in an increasingly digital business landscape. Collaboration with relevant stakeholders, including the government, industry peers, and technology providers, can further facilitate the transition to online transactions and enhance the overall business ecosystem in Bangalore.

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