

Adoption of E-Commerce in Small Business A Paradigm Shifts: An Empirical Analysis

M. Ramu

Assistant Professor, Department of Management Studies, Vignan's Foundation for Science, Technology and Research, Vadlamudi, Guntur, Andhra Pradesh

Dr. Ch. Hymavathi

Associate Professor, Department of Management Studies, Vignan's Foundation for Science, Technology and Research, Vadlamudi, Guntur, Andhra Pradesh

Article Info

Volume 81

Page Number: 1433- 1441

Publication Issue:

November-December 2019

Article History

Article Received: 3 January 2019

Revised: 25 March 2019

Accepted: 28 July 2019

Publication: 06 December 2019

Abstract

In the present study we analyze the business merchants' perception towards adoption of technology such as e-commerce for better productivity in small business. The considered constructs are adopted from Technology adoption model (TAM). A total sample of 800 business merchants' from the Guntur district are collected through simple random technique and out of which survey respondents irregular responses are eliminated finally 756 samples are determined for statistical analysis. Chi-square test was performed to determine the association between perceptions and model constructs. Results are reported and discussions are made as per the results and in correlation between results and previous literature and finally, suggestions and future indication for extension of the study are proposed.

Keywords: Technology, Small business, Ease of Use, Usefulness, Intention.

1. INTRODUCTION:

Over the past five decades, the government's business policy objectives and the tools used to achieve these objectives have changed from time to time, depending on internal and external factors. Sector-level business policy can be further subdivided on the supply side and the demand side (Mahadevan, 2003). The first includes areas related to agrarian reform and land use, development and diffusion of new technologies, public investment in irrigation and rural infrastructure, and support for business prices (Mahadevan, 2003; Mukherjee and Kuroda, 1997, Singh, 2010). Demand-side policies, for their part, include government interventions in business markets and the

operation of public distribution systems. These policies also have macroeconomic effects in terms of impact on public budgets (Ruttan, 2002). Policies at the macro level include policies to strengthen linkages in agriculture and non-business activities, as well as industrial policies that affect the supply of raw materials for agriculture and the supply of business equipment.

OBJECTIVES OF THE STUDY:

- To review the literature with regard to technology adoption feasibility in small business which in turn leads to productivity.
- To empirically analyze the perceptions of business merchants towards technology e-

commerce adoption for enhancement in productivity

2. LITERATURE REVIEW:

Indian farmers face natural problems such as drought, floods, deforestation and natural disasters due to large geographical disparities as well as infrastructure problems. Business merchants' bargaining power is not strong because they pay high-priced inputs and cannot sell their products on the market at high prices, resulting in a general loss of their net income. (Jain, 2017). At the time of technological development and innovation, information and communication technologies have the power to change the state of agriculture in India. The rural population relies to a large extent on agriculture because of the lack of alternative employment opportunities, which makes the current study of strategic importance (Jain, 2017). Based on TAM, the researcher developed and tested FTAM in China's development after incorporating certain concepts, such as social influence, innovation, job relevance, personal effectiveness and relative advantage. As an independent variable. All FTAM constructs have sufficient theoretical support. The results of the study showed that some TAM constructs have a direct and indirect effect on the adoption and intention of computer scientists to develop and use them (Jain, 2017, Reddy, 2005, Thi, Chi and Yamada 2002).

RESEARCH QUESTIONS:

1. Does Perceived Usefulness of e-commerce influence its adoption for small business?
2. Does Related Advantage of e-commerce influence its adoption for small business?

3. Does Perceived Ease of use of e-commerce influence its adoption for small business?
4. Does Intention to Use e-commerce influence its adoption for small business?

The information-based business agriculture system (precision small business) is designed to maximize business production and is often described as the next major development in agriculture. The combination of global positioning system (GPS) and mobile mapping should provide business merchants with the information they need to implement precision small business based on decisions (Mittal and Tripathi, 2009). In the Indian context, the use of mobile phones as a means of providing information on agriculture will depend on the extent to which the mobile network has been able to link business merchants to market information in a timely manner. and precise (Jain, 2017, Mittal and Tripathi, 2009, Mukherjee and Kuroda, 2003, Shahabinejad and Akbari, 2010, Thi et al., 2002). The impact on productivity can be measured directly in terms of higher yield for business merchants, with a decreasing effect on crop patterns and potential yield of planted crops. Information on price factors: input and output prices, and non-price factors, such as information on input availability, seed quality, modern techniques, etc., will play the main role to improve business productivity.

HYPOTHESIS FORMULATION:

- H1: Perceived Usefulness of e-commerce positive significantly influences its adoption for small business.
- H2: Related Advantage of e-commerce positive significantly influence its adoption for small business.

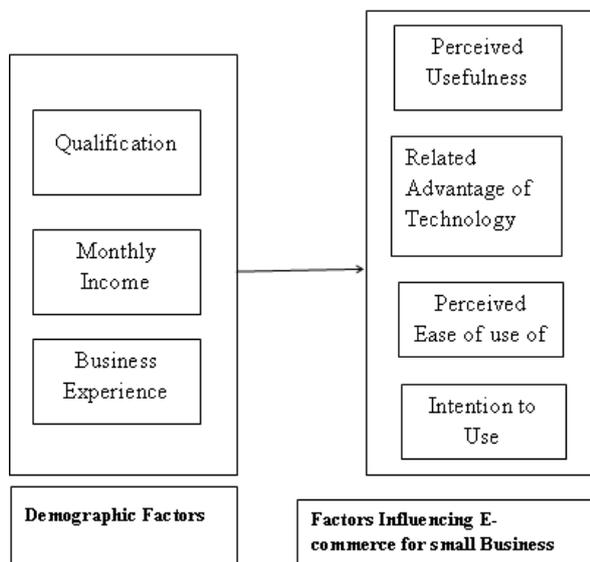
H3: Perceived Ease of use of e-commerce positive significantly influence its adoption for small business.

H4: Intention to Use e-commerce positive significantly influences its adoption for small business.

3. METHODOLOGY:

To test the hypothesis the demographic characteristics such as gender, age, marital status, qualification monthly income and experience in small business are cross tabulated towards hypothesized statements and its association was tested using chi-Square test. A total sample of 800 business merchants from the Guntur district are collected through simple random technique and out of which survey respondents irregular responses are eliminated finally 756 samples are determined for statistical analysis.

PROPOSED MODEL:



DEMOGRAPHICS OF THE RESPONDENTS:

Finally considered sample of the study is 756 sample respondents with about 70 percent belong to gender male and the remaining about 30 percent are female. The second demographic factor are as the major criteria were, about 36.85 percent of the total respondents are under the age category of 25-35 years drastically about 40.8 percent belong to the age of 35-45 years of the total respondents. When coming to marital status of the study respondents with majority 90 percent are engaged in a marital relationship i.e., married and the rest 10 percent are not married either not engaged to any relationship. The most prominent factor of the study the educational qualification of the study, about 33.45 percent are graduates and rest 60 percent do not possess any degree it may be treated as most of them are just SSC/diploma qualified. Coming to the crucial demographic factor experience in business about 45.9 percent have relevant small business experience and in the total sample respondents about 58.6 percent earn Rs. 20,000 to 30,000 per month.

DESCRIPTIVE ANALYSIS: TESTING HYPOTHESIS

H1: Perceived Usefulness of E-Commerce in Small business.

Demographic Description		Total sample n=756	Very much Unlikely	Unlikely	Neutral	Likely	Very much Likely	Chi Square
Qualification	Seasonal Crop	466(61.64)	0(0)	21(4.51)	41(8.8)	319(68.45)	85(18.24)	22.2,df8,<0 .05
	Tropical Crop	252(33.33)	6(2.38)	12(4.76)	21(8.33)	152(60.32)	61(24.21)	

	Both	38(5.03)	0(0)	0(0)	7(18.42)	24(63.16)	7(18.42)	
Monthly Income	Rs. 20,000-30,000	346(45.77)	2(0.58)	11(3.18)	26(7.51)	238(68.79)	69(19.94)	24.9,df12,<0.05
	Rs 30,000-40,000	244(32.28)	0(0)	12(4.92)	29(11.89)	155(63.52)	48(19.67)	
	Rs 40,000-50,000	120(15.87)	4(3.33)	10(8.33)	10(8.33)	70(58.33)	26(21.67)	
	>Rs 50,000	46(6.08)	0(0)	0(0)	4(8.7)	32(69.57)	10(21.74)	
Small business Experience	0-2 Years	278(36.77)	0(0)	8(2.88)	28(10.07)	200(71.94)	42(15.11)	27.9,df12,<0.05
	2-5 Years	346(45.77)	6(1.73)	19(5.49)	31(8.96)	217(62.72)	73(21.1)	
	5-10 Years	62(8.2)	0(0)	4(6.45)	2(3.23)	34(54.84)	22(35.48)	
	> 10 Years	70(9.26)	0(0)	2(2.86)	8(11.43)	44(62.86)	16(22.86)	

Table 1: Perceived Usefulness of E-Commerce in Small business

Analysis:

It can be interpreted or predicted from the above contingency table that respondents perception who do small business and with their qualification has a positive significant association (22.2,df8,<0.05) i.e., the demographic factor qualification will have positive effect in adopting e-commerce for the business. It can be interpreted or predicted from the above contingency table that respondents perception who do small business and with their monthly income has a positive significant association (24.9,df1,<0.05) i.e., the demographic factor monthly income will have positive effect in

adopting e-commerce for the business. It can be interpreted or predicted from the above contingency table that respondents perception who do small business and with their small business experience has a positive significant association (22.2,df8,<0.05) i.e., the demographic factor small business experience will have positive effect in adopting e-commerce for the business. Were, this revealed that hypothesis Perceived Usefulness of E-Commerce in Small business was proved.

H2: Related Advantage of E-Commerce in Small business.

Demographic Description		Total sample n=756	Very much Unlikely	Unlikely	Neutral	Likely	Very much Likely	Chi Sq
Qualification	Seasonal Crop	466(61.64)	4(0.86)	15(3.22)	57(12.23)	311(66.74)	79(16.95)	7.18,df8,>0.05
	Tropical Crop	252(33.33)	2(0.79)	8(3.17)	25(9.92)	157(62.3)	60(23.81)	
	Both	38(5.03)	0(0)	0(0)	5(13.16)	24(63.16)	9(23.68)	
Monthly Income	Rs. 20,000-30,000	346(45.77)	0(0)	13(3.76)	34(9.83)	234(67.63)	65(18.79)	12.82,df12,>0.05
	Rs 30,000-40,000	244(32.28)	4(1.64)	6(2.46)	31(12.7)	154(63.11)	49(20.08)	
	Rs 40,000-50,000	120(15.87)	2(1.67)	4(3.33)	18(15)	72(60)	24(20)	
	>Rs 50,000	46(6.08)	0(0)	0(0)	4(8.7)	32(69.57)	10(21.74)	
Small business	0-2 Years	278(36.77)	0(0)	6(2.16)	40(14.39)	193(69.42)	39(14.03)	25.91,12df,<0

Experience	2-5 Years	346(45.77)	6(1.73)	13(3.76)	39(11.27)	211(60.98)	77(22.25)	.05
	5-10 Years	62(8.2)	0(0)	2(3.23)	2(3.23)	46(74.19)	12(19.35)	
	> 10 Years	70(9.26)	0(0)	2(2.86)	6(8.57)	42(60)	20(28.57)	

Table 2: Related Advantage of E-Commerce in Small business

Analysis:

It can be interpreted or predicted from the above contingency table that respondents perception who do small business and with their qualification has a positive significant association (7.18,df8,<0.05) i.e., the demographic factor qualification will have positive effect in adopting e-commerce for the business. It can be interpreted or predicted from the above contingency table that respondents perception who do small business and with their monthly income has a positive significant association (12.82,df12,>0.05) i.e., the demographic factor monthly income will have positive effect in adopting e-commerce for the

business. It can be interpreted or predicted from the above contingency table that respondents perception who do small business and with their small business experience has a positive significant association (25.91,12df, <0.05) i.e., the demographic factor small business experience will have positive effect in adopting e-commerce for the business. Were, this revealed that hypothesis related advantage of E-Commerce in Small business was proved.

H3: Perceived Ease of use of E-Commerce in Small business.

Demographic Description		Total sample n=756	Very much Unlikely	Unlikely	Neutral	Likely	Very much Likely	Chi Sq
Qualification	Seasonal Crop	466(61.64)	2(0.43)	6(1.29)	49(10.52)	348(74.68)	61(13.09)	4.82,df8,>0.05
	Tropical Crop	252(33.33)	0(0)	4(1.59)	25(9.92)	187(74.21)	36(14.29)	
	Both	38(5.03)	0(0)	0(0)	7(18.42)	25(65.79)	6(15.79)	
Monthly Income	Rs. 20,000-30,000	346(45.77)	0(0)	2(0.58)	38(10.98)	261(75.43)	45(13.01)	10.03,df12,>0.05
	Rs 30,000-40,000	244(32.28)	2(0.82)	6(2.46)	25(10.25)	177(72.54)	34(13.93)	
	Rs 40,000-50,000	120(15.87)	0(0)	2(1.67)	12(10)	90(75)	16(13.33)	
	>Rs 50,000	46(6.08)	0(0)	0(0)	6(13.04)	32(69.57)	8(17.39)	
Small business Experience	0-2 Years	278(36.77)	0(0)	2(0.72)	34(12.23)	215(77.34)	27(9.71)	16.05,df12,>0.05
	2-5 Years	346(45.77)	2(0.58)	6(1.73)	37(10.69)	247(71.39)	54(15.61)	
	5-10 Years	62(8.2)	0(0)	2(3.23)	2(3.23)	48(77.42)	10(16.13)	
	> 10 Years	70(9.26)	0(0)	0(0)	8(11.43)	50(71.43)	12(17.14)	

Table 3: Perceived Ease of use of E-Commerce in Small business.

Analysis:

It can be interpreted or predicted from the above contingency table that respondents

perception who do small business and with their qualification has a positive significant association (4.82,8df,<0.05) i.e., the

demographic factor qualification will have positive effect in adopting e-commerce for the business. It can be interpreted or predicted from the above contingency table that respondents perception who do small business and with their monthly income has a positive significant association (10.03,df12,>0.05) i.e., the demographic factor monthly income will have positive effect in adopting e-commerce for the business. It can be interpreted or predicted from the above contingency table that respondents perception who do small

business and with their small business experience has a positive significant association (16.05,12df,<0.05) i.e., the demographic factor small business experience will have positive effect in adopting e-commerce for the business. Were, this revealed that hypothesis perceived ease of use of E-Commerce in Small business was proved.

H4: Intention to Use E-Commerce in Small business.

Demographic Description		Total sample n=756	Very much Unlikely	Unlikely	Neutral	Likely	Very much Likely	Chi Sq
Qualification	Seasonal Crop	466(61.64)	2(0.43)	19(4.08)	51(10.94)	323(69.31)	71(15.24)	9.57,df8,<0.05
	Tropical Crop	252(33.33)	2(0.79)	8(3.17)	25(9.92)	165(65.48)	52(20.63)	
	Both	38(5.03)	0(0)	0(0)	8(21.05)	23(60.53)	7(18.42)	
Monthly Income	Rs. 20,000-30,000	346(45.77)	0(0)	13(3.76)	37(10.69)	243(70.23)	53(15.32)	10.43,df12,<0.05
	Rs 30,000-40,000	244(32.28)	2(0.82)	8(3.28)	29(11.89)	158(64.75)	47(19.26)	
	Rs 40,000-50,000	120(15.87)	2(1.67)	6(5)	12(10)	78(65)	22(18.33)	
	>Rs 50,000	46(6.08)	0(0)	0(0)	6(13.04)	32(69.57)	8(17.39)	
Small business Experience	0-2 Years	278(36.77)	0(0)	10(3.6)	32(11.51)	202(72.66)	34(12.23)	18.10,df12,<0.05
	2-5 Years	346(45.77)	4(1.16)	15(4.34)	38(10.98)	221(63.87)	68(19.65)	
	5-10 Years	62(8.2)	0(0)	0(0)	4(6.45)	44(70.97)	14(22.58)	
	> 10 Years	70(9.26)	0(0)	2(2.86)	10(14.29)	44(62.86)	14(20)	

Table 4: Intention to Use E-Commerce in Small business

Analysis:

It can be interpreted or predicted from the above contingency table that respondents perception who do small business and with their qualification has a positive significant association (9.57,8df,<0.05) i.e., the demographic factor qualification will have positive effect in adopting e-commerce for the business. It can be interpreted or predicted from the above contingency table that respondents perception who do small

business and with their monthly income has a positive significant association (10.43,df12,>0.05) i.e., the demographic factor monthly income will have positive effect in adopting e-commerce for the business. It can be interpreted or predicted from the above contingency table that respondents perception who do small business and with their small business experience has a positive significant association (18.10,12df,<0.05) i.e., the

demographic factor small business experience will have positive effect in adopting e-commerce for the business (Manideep, 2019; Manideep, Reddy, & Reddy, 2019a, 2019b). Were, this revealed that hypothesis intention to use of E-Commerce in Small business was proved.

4. RESULTS AND DISCUSSIONS:

It can be interpreted or predicted from the above contingency table that respondents perception who do small business and with their qualification has a positive significant association (22.2,df8,<0.05) i.e., the demographic factor qualification will have positive effect in adopting e-commerce for the business. It can be interpreted or predicted from the above contingency table that respondents perception who do small business and with their monthly income has a positive significant association (24.9,df1,<0.05) i.e., the demographic factor monthly income will have positive effect in adopting e-commerce for the business. It can be interpreted or predicted from the above contingency table that respondents perception who do small business and with their small business experience has a positive significant association (22.2,df8,<0.05) i.e., the demographic factor small business experience will have positive effect in adopting e-commerce for the business. Were, this revealed that hypothesis Perceived Usefulness of E-Commerce in Small business was proved. Hence, H1 is proved.

It can be interpreted or predicted from the above contingency table that respondents perception who do small business and with their qualification has a positive significant association (7.18,df8,<0.05) i.e., the demographic factor qualification will have positive effect in adopting e-commerce for the business. It can be interpreted or

predicted from the above contingency table that respondents perception who do small business and with their monthly income has a positive significant association (12.82,df12,>0.05) i.e., the demographic factor monthly income will have positive effect in adopting e-commerce for the business. It can be interpreted or predicted from the above contingency table that respondents perception who do small business and with their small business experience has a positive significant association (25.91,12df, <0.05) i.e., the demographic factor small business experience will have positive effect in adopting e-commerce for the business. Were, this revealed that hypothesis related advantage of E-Commerce in Small business was proved. Hence, H2 is proved.

It can be interpreted or predicted from the above contingency table that respondents perception who do small business and with their qualification has a positive significant association (4.82,8df,<0.05) i.e., the demographic factor qualification will have positive effect in adopting e-commerce for the business. It can be interpreted or predicted from the above contingency table that respondents perception who do small business and with their monthly income has a positive significant association (10.03,df12,>0.05) i.e., the demographic factor monthly income will have positive effect in adopting e-commerce for the business. It can be interpreted or predicted from the above contingency table that respondents perception who do small business and with their small business experience has a positive significant association (16.05,12df,<0.05) i.e., the demographic factor small business experience will have positive effect in adopting e-commerce for the business. Were,

this revealed that hypothesis perceived ease of use of E-Commerce in Small business was proved. Hence, H3 is disproved.

It can be interpreted or predicted from the above contingency table that respondents perception who do small business and with their qualification has a positive significant association (9.57,8df,<0.05) i.e., the demographic factor qualification will have positive effect in adopting e-commerce for the business. It can be interpreted or predicted from the above contingency table that respondents perception who do small business and with their monthly income has a positive significant association (10.43,df12,>0.05) i.e., the demographic factor monthly income will have positive effect in adopting e-commerce for the business. It can be interpreted or predicted from the above contingency table that respondents perception who do small business and with their small business experience has a positive significant association (18.10,12df,<0.05) i.e., the demographic factor small business experience will have positive effect in adopting e-commerce for the business. Were, this revealed that hypothesis intention to use of E-Commerce in Small business was proved. Hence, H4 is proved.

IMPLICATIONS AND FURTHER RESEARCH:

States of India where small business is the main occupation of the state's inhabitants. The respondents who completed the questionnaire were contacted personally, but the circumstances under which the test was conducted were not checked. Therefore, it is not known whether the conditions were still optimal for such a test, such as time, sincerity, distractions, and no source of bias, and the test ended in one session without

interruption. Sometimes the researcher had to leave the questionnaire to the respondents for later interpretation (Jain, 2017). It could have been better for respondents to complete the questionnaire under the best test conditions and under the best possible control. The current study took into account a limited number of demographic indicators, while in the future other variables such as household composition, ethnicity, social class, etc. It can be taken into account for a similar study (ALI, 2005; Amin & Li, 2016; Barker, Dawe, & Inocencio, 2003; Jain, 2017; Jin et al., 2019; Mahadevan, 2003; Mittal & Tripathi, 2009; Mukherjee & Kuroda, 2003; Reddy, 2005; Shahabinejad & Akbari, 2010; Singh, 2010; Stiroh, 2019).

REFERENCES:

- [1] ALI, S. (2005). Total Factor Productivity Growth and Agricultural Research and Extension: An Analysis of Pakistan's Agriculture, 1960 – 1996. *The Pakistan Development Review*, 44(4), 729–746.
- [2] Amin, K., & Li, J. (2016). Applying Farmer Technology Acceptance Model to Understand Farmers' Behavioral Intention to use ICT Based Microfinance Platform: A Comparative analysis between Bangladesh and China. *The Thirteenth Wuhan International Conference on E-Business—IT/IS Technology for E-Business*, (July), 123.
<https://doi.org/10.13140/RG.2.1.3832.9363>
- [3] Barker, R., Dawe, D., & Inocencio, A. (2003). Economics of Water Productivity in Managing Water for Agriculture. *Economics of Water Productivity in Agriculture*, 19–35.
- [4] Jain, P. (2017). Impact of Demographic Factors: Technology Adoption in. *SCMS Journal of Indian Management*, 3(September), 93–102.
- [5] Jin, S., Huang, J., Hu, R., Rozelle, S., Jin, S., Huang, J., ... Rozelle, S. (2019). The

- Creation and Spread of Technology and Total Factor Productivity in China ' s Agriculture. *Agricultural & Applied Economics Association*, 84(4), 916–930.
- [6] Mahadevan, R. (2003). PRODUCTIVITY GROWTH IN INDIAN AGRICULTURE : THE ROLE OF GLOBALIZATION AND. *Asia-Pacific Development Journal*, 10(2), 57–72.
- [7] Manideep, A. S. (2019). Impact of Social Network Advertisements on Brand Equity of Wellness Firms and the Mediating Role of Brand Awareness : An Empirical Analysis ABSTRACT: *International Journal of Management and Business Research*, 9(June), 46–53. Retrieved from <http://ijmbr.info/abstract.php?archiveid=204>
- [8] Manideep, A. S., Reddy, M. S. K., & Reddy, P. S. (2019a). Consumers ' Perceptions on Nanotechnology Enabled Cosmetic Products in Conception of Physical Wellness. *JOURNAL OF MECHANICS OF CONTINUA AND MATHEMATICAL SCIENCES*, 14(5), 899–909.
<https://doi.org/10.26782/jmcms.2019.10.00073>
- [9] Manideep, A. S., Reddy, P. S., & Reddy, M. S. K. (2019b). Consumers ' Perception on Purchase of Wellness Products : An Empirical Analysis. *International Journal of Innovative Technology and Exploring Engineering*, 8(7), 1715–1719.
- [10] Mittal, S., & Tripathi, G. (2009). Role of Mobile Phone Technology in Improving. *Agricultural Economics Research Review*, 22, 451–459.
- [11] Mukherjee, A. N., & Kuroda, Y. (2003). Productivity growth in Indian agriculture : is there evidence of convergence across states ? *Agricultural Economics*, 5150(03), 43–53. [https://doi.org/10.1016/S0169-5150\(03\)00038-0](https://doi.org/10.1016/S0169-5150(03)00038-0)
- [12] Reddy, P. K. (2005). A framework of information technology-based agriculture information dissemination system to improve crop productivity, 88(12), 1905–1913.
- [13] Shahabinejad, V., & Akbari, A. (2010). Measuring agricultural productivity growth in Developing Eight. *Journal of Development and Agricultural Economics*, 2(9), 326–332.
- [14] Singh, G. (2010). Replacing Rice with Soybean for Sustainable Agriculture in the Indo-Gangetic Plain of India : Production Technology for Higher Productivity of Soybean. *International Journal of Agricultural Research*, 5(5), 259–267.
<https://doi.org/10.3923/ijar.2010.259.267>
- [15] Stiroh, B. K. J. (2019). Information Technology and the U . S . Productivity Revival : What Do the Industry Data Say ? *American Economic Association*, 92(5), 1559–1576.