A Study on Impact of Designation & Employment Role Consumption of Multi-Functional Printers (Mfp) In Hyderabad.

Dr.N.Srinivas Kumar, Professor, Sritist, Nalgonda.

ABSTRACT: *MFP leaders have been busy aggressively working on various strategies in order to retain leadership positions and break through the clustering in the leadership zone. MFP leaders need to focus on certain important characteristics that appeals to customers. This article is a maiden attempt to study some certain usage characteristics of individual customers in view of their working properties like designation level and vertical they belongs to. The study was done on 80 employees who belongs to supervisory level in their respective organizations. The data so collected through market survey analyzed through chi-square analysis and the study found that the study characteristics are independent of workplace characteristics in the companies.*
Keywords: multi-functional printers, printing volume, brand perception, readiness to buy.

I.   Introduction

Many organizations are current facing the greatest struggle to survive their business in marketplace during this world economic disaster since October 2008. Today, many people believe this crisis could be worse, deep and dangerous than any of previous recessions. Of course, this recession is jolting every industry. How to sustain and progress the business in today's circumstance becomes a hot topic of discussion. With a focus on business process and delivery value, this study try to identify research issues from the following literature review. The research in the area of office stationary and equipment is not much promising in India. There is very exiguous research for the reasons unknown. With a strenuous effort it was possible to find out some certain literature but with serous limitations. The limitations range from relatedness of report to unlikely in nature. The following is the summary of literature survey.

Rogowsky, R. A., Laney-Cummings, K., (2009) did some certain study on multifunctional products and they finds that the industry is rapidly evolving. Trade and competitive situation of the thousands of multi-functional products imported into and exported from the United States. Over the past 20 years, the US international trade in this category has risen by almost 400 percent. International supply chains have become more global, and competition has increased. Each Industry and Trade Summary addresses a different commodity or industry and contains information on trends in consumption, production, and trade, together with an analysis of factors affecting industry trends and competitiveness in domestic and foreign markets.

Xerox, (2015) reports that the managed print services market continues to gain momentum as enterprises seek to tackle escalating print costs and drive greater business efficiency. The market is relatively buoyant with 51% of organizations (either already using or planning to use MPS) indicating they plan to increase expenditure on MPS over the next year. Whilst broader work flow solutions are proving to be a significant differentiators, service delivery remains a key MPS market driver. Quocirca believes that continued investment to drive enhanced service performance through predictive analytic and a focus on consistent delivery through integrated back-end platforms is ultimately what sets the leading providers apart.

Fernandes, L., et al. (2009), The study concludes that the printer market HP is actively developing its product range across its hardware, solutions and service portfolio to differentiate it in a highly commoditised market. Success here will also rely on active engagement with channel partners, HP's primary route to market. Increasing penetration in the enterprise market remains HP's key challenge, given the strength of established vendors. With HP Exstream, HP has a real opportunity to capture the higher value pages in the production space, as well as participate in multichannel content creation, although it still lacks the production devices to effectively compete against vendors in light/mid production such as Xerox, Canon, Ricoh and Konica Minolta. HP will need to continue to place emphasis on addressing the environmental concerns associated with printing. With its comprehensive MPS offerings and its wide solutions portfolio to optimize printing practices, HP certainly has the technology to help customers achieve this. Whilst it may be straight forward to educate customers to take simple measures to reduce paper wastage, ultimately HP is encouraging customers to print more color, but in the context of printing efficiently. This has essentially become a mantra for most printer companies, and needs user education to understand that print volumes can be reduced in favor of fewer, but better quality prints. But where black and white printing is sufficient, print management capabilities should be utilized to limit wasteful color printing. Ultimately, any organization will want to save costs, and if quality can be improved at the same time, so much the better.

Zhang, H. (2010), did a study on HP value chain with an objective of identifying what we real understand the value chain in organization after we completed course of value chain management. The study examines the value chain from one of the well known global organization - Hewlett-Packard by utilizing many available literature. The report covers HP company profile, its role in value chain, their customers and value propositions. It also explores from a value chain perspective to determine how HP creates value to its customers. Hattingh , M. (2001) did a study on the concept of "paperless office" and its significance on business value. The study states that "Major changes are taking place in the global workplace. The European Foundation reveals that work is becoming more intensive, more than 50% of workers are working at high speed or tight deadlines most of the time, the nature of the work is driven by customer demands and the number of people working with computers has increased to 41% in 2000. The strain on the employee is ultimately reflected in the work-related health issue of muscular pains in the neck and shoulders reported by a quarter of the workforce"

II.   Objectives And Research Methodology

This study titled "impact of designation and employment role on consumption of multifunctional printers" is empirical study with a sample size of 80. The study was carried out in Hyderabad during April - May 2015. The sample unit employees who belongs to supervisory levels in their working place. The study has certain study variables viz., usage of printers, brand perception, printing type, current requirement, approximate volume of printing and buying pattern. These characteristics were studied against two independent variables that are designation level and vertical. The vertical is none other than department where the study individual working. The following are the objectives of this study.
1. To know about various characteristics of study individuals with respect to their work nature which is linked to usage of multifunctional printers.
2. To find and assess the level of impact of of designation level on printing.
3. to find and assess the level of impact of vertical on printing

Chi-square analysis was done on collected data. There is more description regarding this technique in the analysis of the study. For the purpose of chi-square test the null hypothesis goes as there is no dependency between variables under study. For instance, the null hypothesis for designation level and print volume states that "the print volume does not depend on designation level" (H_0). From the p-value which is obtained from chi-square analysis make it possible to with-draw inference for the study.

III.   Analysis

This part of the report deal with data analysis. The data is analyzed through chi-square analysis coupled with frequency tables. Analysis of data is a process of inspecting, cleaning, transforming, and modeling data with the goal of discovering useful information, suggesting conclusions, and supporting decision-making. Data analysis has multiple facets and approaches, encompassing diverse techniques under a variety of names, in different business, science, and social science domains. The analysis was done in SPSS v 20. There were both frequency tables and summary measures from chi-square analysis. For the sake of simplicity frequency tables were not shown in the article but description is retained. But there was certain discussion on measures from chi-square analysis.

Chi square analysis

A **c**hi-squared test, also referred to as χ^2 test (or chi-square test), is any statistical hypothesis test in which the sampling distribution of the test statistic is a chi-square distribution when the null hypothesis is true. Chi-squared tests are often constructed from a sum of squared errors, or through the sample variance. Test statistics that follow a chi-squared distribution arise from an assumption of independent normally distributed data, which is valid in many cases due to the central limit theorem. A chi-squared test can then be used to reject the hypothesis that the data are independent. A frequency table is constructed by arranging collected data values in ascending order of magnitude with their corresponding frequencies.

	Factor	Chi-square		Likelihood ratio	
		Statistic	P value	Statistic	P value
1	**Designation**				
	Usage of printer	3.597[a]	.463	4.001	.406
	Brand perception	9.458[a]	.489	10.888	.366
	Printing type	2.589[a]	.629	2.625	.622
	Current Requirement of any printer or MFP	5.497[a]	.240	6.038	.196
	Approx Print volume per month	3.371[a]	.909	4.208	.838
	Buying Pattern	6.918	.140	7.207	.125

The above table deals with chi-square test between designation levels and using printer. Out of 80 survey individuals 49 survey respondents use MFP and only 8 survey respondents do not use MFP. 23 survey respondents denied sharing information. The chi-square statistic is 3.597 with a p-value 0.463, here p-value is > 0.05 thus it's an alternative hypothesis. So, MFP use doesn't depend on designation levels.

Regarding designation levels and product brand. Out of 80 survey individuals 9 survey respondents use Canon, 2 survey respondents use Epson, 19 survey respondents use HP, 2 survey respondents use Ricoh and 17 survey respondents use Sharp. 31 survey respondents denied sharing information. The chi-square statistic is 9.458 with a p-value 0.489, here p-value is > than 0.05 thus it's an alternative hypothesis. So, product brand doesn't depend on designation levels.

The above table deals with chi-square test between designation levels and Printing type. Out of 80 survey individuals 15 survey respondents use A4 type and only 34 survey respondents use both color A3&A4 size printing type paper. 31 survey respondents denied sharing information. The chi-square statistic is 2.589 with a p-value 0.629, here p-value is > than 0.05 thus it's an alternative hypothesis. So, printing type doesn't depend on designation levels.

Regarding chi-square test between designation levels and current requirement of any printer or MFP. Out of 80 survey individuals 63 survey respondents don't require any printer or MFP and 8 survey respondents told they require. 9 survey respondents denied sharing information. The chi-square statistic is 5.497 with a p-value 0.240, here p-value is > 0.05 thus it is alternative hypothesis. So, current requirement doesn't depend on designation levels

The above table deals with chi-square test between designation levels and approximate print volume per month. Out of 80 survey individuals 27 survey respondents use between 0 to 1000, 9 use between 1000 to 2000, 4 use between 2000 to 3000, 4 use between 3000 to 4000 and 4 use between 4000 to 5000. The chi-square statistic is 3.371 with a p-value 0.909, here p-value is > than 0.05 thus it's an alternative hypothesis. So, approx print volume doesn't depend on designation levels.

Regarding chi-square test between vertical and product brand. Out of 80 survey individuals 9 survey respondents use Canon, 2 survey respondents use Epson, 19 survey respondents use HP, 2 survey respondents use Ricoh and 17 survey respondents use Sharp. 31 survey respondents denied sharing information. The chi-square statistic is 3.344 with a p-value 0.647, here p-value is > than 0.05 thus it's an alternative hypothesis. So, product brand doesn't depend on vertical.

Factor	Chi-square		Likelihood ratio	
	Statistic	P value	Statistic	P value
Vertical				
Usage of printer	6.157	0.103	7.021	0.626
Brand usage	8.79	0.389	5.114	0.17
Printing type	7.902	0.614	1.713	0.926
Current Requirement of any printer or MFP	3.347	0.057	4.261	0.353
Approx Print volume per month	6.925	0.405	1.199	0.83
Buying Pattern	9.723	0.432	2.009	0.247

The above table deals with chi-square test between vertical and usage of printer. Out of 80 survey individuals 15 survey respondents use A4 type and only 34 survey respondents use both color A3&A4 size printing type paper. 31 survey respondents denied sharing information. The chi-square statistic is 6.157 with a p-value 0.103, here p-value is < than 0.05 thus it's a null hypothesis. So, usage of printer doesn't depend on vertical.

Regarding chi-square test between vertical and brand usage. Out of 80 survey individuals 63 survey respondents don't require any printer or MFP and 8 survey respondents told they require. 9 survey respondents denied sharing information. The chi-square statistic is 8.79 with a p-value 0.389, here p-value is <than 0.05 thus it's a null hypothesis. So, brand perception does not depend on vertical.

Regarding chi-square test between vertical and requirement for printer. Out of 80 survey individuals 27 survey respondents use between 0 to 1000, 9 use between 1000 to 2000, 4 use between 2000 to 3000, 4 use between 3000 to 4000 and 4 use between 4000 to 5000. The chi-square statistic is 7.902 with a p-value 0.057, here p-value is > than 0.05 thus it's a null hypothesis. So, requirement for printer does not depend on vertical.

Regarding chi-square test between approximate print volume and vertical. Out of 80 survey individuals 45 survey respondents told that they opted for outright (ire. own), 4 survey respondents told they have opted for rental basis and 31 survey respondents denied sharing information. The chi-square statistic is 6.925 with a p-value 0.000, here p-value is < than 0.05 thus it's a null hypothesis. So, buying pattern depends on vertical.

Regarding chi-square test between color or buying pattern. Out of 80 survey individuals 9 survey respondents use the brand Canon out of which 2 respondents use B/W and 7 respondents use color, 2 survey respondents use the Epson out of 2 respondents use B/W, 19 survey respondents use the brand HP of which 6 respondents use B/W and 13 use color, 2 survey respondents use the brand Rico of which 2 use B/W and 17 survey respondents use the brand Sharp of which 14 use B/W and 1 use color. 31 survey respondents denied sharing information. The chi-square statistic is 9.723 with a p-value 0.432, here p-value is < than 0.05 thus it is null hypothesis. So, product pattern does not depend on vertical.

IV.   Conclusion

Bottom level people are mostly using printer or MFP than the middle and bottom level. Most of the people in companies are opting HP brand. The price of SHARP printer is quite higher than its competitors. So company must be aware of price of the product. Sharp is standing in second place. The quality of Sharp product is better than its competitors, because its source of origin i.e. Japanese company. Most of the people in companies are using both i.e. A3 & A4. Companies change according to the generation and most of the companies already have MFP, so there are very less percentage of people who need a printer/MFP. Most of the people in companies are having approx print volume per month maximum between 0-1000. Because most of my survey respondents are small size and medium size companies. As we know small and medium size companies take fewer prints. Buying pattern is mostly outright process. Regarding chi-square test it is very clear that there is ample evidence in support of null hypothesis that the roles and vertical of employees doesn't influence usage of MFP especially in Hyderabad. So, there are other issues that need to be studied while understanding impact of designation and other roles on usage of printers.

References

[1].   Rogowsky, R. A., Laney-Cummings, K., (2009). Multifunction products: report of united states international trade commission. Available from http://www.usitc.gov/publications/332/ITS_3.pdf

[2].   Xerox, (2015). A vendor analysis of the global enterprise MPS market. MPS Market Landscape, 2015 July 2015. Available at http://www.xerox.com/downloads/usa/en/gdo/reports/gdo_landscape_quocirca_mps.pdf

[3].   Fernandes, L., et al. (2009), IT Analysis – HP Reinforces focus on responsible printing while controlling costs. © 2009 Quocirca Ltd

[4].   Zhang, H. (2010), Research Hewlett Packard through its Value Chain. International Journal of Business and Management Vol. 5, No. 8; August 2010

[5].   Hattingh, M. (2001). The features and impact of the paperless office, with specific reference to the City of Johannesburg. South African Journal. Vol.3(3/4) December 2001.

[6].   Auditore, P.J. 2001. The emerging enterprise portal market: an overview of key issues and trends impacting enterprise adoption. Enterprise Systems, (1):32–34.

[7].   Baines, A. 1997. End the paper chase. Work Study, 46(1):25–26. Brunwin, V. 1994. A survivor's guide to workflow. Management Development Review, 7 (4):27–29. Dudley, G. 2001. Internet usage growth in Africa tops 100%. [Online]. Available WWW: http://www.itweb.co.za.

[8].   European Foundation, 2001. Ten years of working conditions in the European Union. [Online]. Available WWW: http://www.eurofound.ie.