

Application of Datamining for estimating the marketing success of the women entrepreneurs

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ABSTRACT

Women entrepreneurs incessantly face the problems in marketing their products. In this research study, we examine the marketing problems faced by women entrepreneurs in running their enterprises and designed the marketing strategy for women entrepreneurs in Tamilnadu and also provide suggestions to them how to market their products or services to become successful entrepreneurs. Researcher collected the list of women entrepreneurs in Trichy district and the data was collected through in-depth personal interviews using questionnaire from 291 women entrepreneurs in Tamilnadu. The results of the study have indicated that the women entrepreneurs have to improve their marketing strategies like sales promotion, networking and clustering, brand and technology, visual media advertisement, print media advertisement, distribution channels, direct selling and product variety in their business. And the results of the study have indicated that pricing strategy is not affecting the business success of the women entrepreneurs. These marketing strategies lead to improve the business success of the women entrepreneurs. However the researcher has given some valid suggestions to improve marketing strategies of the women entrepreneurs.

Introduction

Entrepreneurs play very important role in socio-economic welfare of the country. They identify the needs of the business, purchase the other factors of production and coordinate them for some productive purposes. They are the innovators, researchers and risk-takers of the company. Due to the mixed economy in India, both public and private entrepreneurship exists here. Large scale sectors are under the public entrepreneurship. The middle and small scale

sectors are under the private entrepreneurship. In order to develop entrepreneurship in this sector, Government of India has stepped towards the entrepreneurship development programmes (Lathwal, 2011).

Many studies indicate that women start businesses for fundamentally different reasons than their male counterparts. While men start businesses primarily for growth opportunities and profit potential, women most often found businesses in order to meet personal goals, such

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as gaining feelings of achievement and accomplishment. In many instances, women consider financial success as an external confirmation of their ability rather than as a primary goal or motivation to start a business, although millions of women entrepreneurs will grant that financial profitability is important in its own right. In fact, over 30 percent of women entrepreneurs reported that they started a business due to some traumatic event, such as divorce, discrimination due to pregnancy or the corporate glass ceiling, the health of a family member, or economic reasons such as a layoff. But a new talent pool of women entrepreneurs is forming today, as more women opt to leave corporate America to chart their own destinies. Many of these women have developed financial expertise and bring experience in manufacturing or nontraditional fields. As a result, the concentration of women business owners in the retail and service sectors—and in traditional industries such as cosmetics, food, fashion, and personal care is slowly changing.

When we looked at the self reported reasons for success of these women entrepreneurs. When asked what led to their success, the most common reason given seems to be personal qualities such as hard work and perseverance. Product related factors such as providing a quality product, uniqueness of offerings and variety of products offered were the most frequently stated reasons for success. People skills and marketing skills were mentioned by some women. A significant number of women also credited their success to the support provided by their spouses. While research in other developing countries does indicate that personal qualities are critical success factors for entrepreneurs, they usually are rated as lower in importance to other factors such as good management skills or having access to financial resources. The high

importance placed on personal qualities by the respondents in this study may be due to the differing socio-cultural environment that these women operate in. The entry of women into the entrepreneurial world is only a recent development in India due to the orthodox, traditional nature of Indian society. Hence, these women, who are the first to break out of socio-cultural constraints, must have felt that personal qualities are more important than managerial or technical skills (Das, 2001).

Women owned businesses are highly increasing in the economies of almost all countries. The hidden entrepreneurial potentials of women have gradually been changing with the growing sensitivity to the role and economic status in the society. But the Indian women entrepreneurs are facing some major constraints like as lack of confidence, socio-cultural barriers, motivational factors, knowledge in business administration, awareness about the financial assistance, exposed to the training programs and identifying the available resources. In general, women lack confidence in their strength and competence. The family members and the society are reluctant to stand beside their entrepreneurial growth. Women's family and personal obligations are sometimes a great barrier for succeeding in business career. Self motivation can be realized through a mind set for a successful business, attitude to take up risk and behavior towards the business society by shouldering the social responsibilities (Deshpande and Sethi, 2009).

Marketing problem is the biggest problem faced by women entrepreneurs. Women entrepreneurs incessantly face the problems in marketing their products. It is one of the core problems as this area is mainly dominated by males and even women with adequate experience fail to make a dent. For marketing the products women

entrepreneurs have to be at the mercy of middlemen who pocket the hunk of profit. Although the middlemen exploit the women entrepreneurs, the purging of middlemen is tricky, because it involves a lot of running about. Women entrepreneurs also find it difficult to capture the market and make their products popular. Lot of the women entrepreneurs have imperfect organizational set up to drive in a lot of money for canvassing and advertisements. They have to face severe competition from organized industries. They have also to face a stiff competition with the men entrepreneurs who easily involve in the promotion and development area and carry out easy marketing of their products with both the organized sector and their male counterparts. Such a competition ultimately results in the insolvency of women entrepreneurs (Masood, 2011). This study focuses on the marketing problems of women entrepreneurs in Tamilnadu and suggests marketing strategies for women entrepreneurs in Tamilnadu.

Review of Literature

Women entrepreneurs account for a sizable majority of small-scale entrepreneurs in Africa. Belwal et al. (2012) investigated the contribution of microfinance to the economic improvement of women small-scale entrepreneurs in Addis Ababa. The research assessed the impact of credit and saving services on the economic improvement of women small-scale entrepreneurs by using secondary data and a quantitative analysis based on questionnaires and interviews. The study probes financial facets such as income, savings, credit, financial services, family obligations and access to education. It concluded that women entrepreneurs who obtain microfinance face a number of problems.

Malaysian government provides a platform for women entrepreneurs to build strong businesses

through the use of information technology and the internet. Hashim et al., (2011) revealed that women entrepreneurs will become competitive at a global level through the exposure to technology-based learning. In the present era, women-owned businesses in the form of women entrepreneurs are one of the fastest growing entrepreneurial populations in the India. Haynes et al. (2009) used financial information about both the family and the business to examine the relationship between household financial indicators and business financial indicators for women- and men-owned family businesses. The author suggested that, while household financial statements may be good indicators for men-owned businesses, they appear to be much less reliable for women-owned businesses.

Women are the majority owners in 30% of all privately held firms in the United States. Manolova et al., (2008) used an expectancy theory framework to examine the differences in motivations to start a firm between men and women. They proposed that nascent entrepreneurs expend effort toward the creation of a new venture because they believe this will lead to a set of desired outcomes. Pio (2007) explored the lived-in and lived-through experiences of Indian women entrepreneurs in New Zealand in the context of ethnic entrepreneurship. Through a four-stage model emerging from qualitative interviews, the article illuminates the bittersweet entrepreneurial process of ethnic minority migrant women. The four stages are: the low permeability for entry into the job market for ethnic minority migrant women; underemployment; setting up a micro-enterprise and expanding the business and creating employment for others, primarily co-ethnics as well as an expanding customer base.

In their study, Giusta and Phillips (2006) attempted to discuss the gendered nature of the

barriers to survival and growth, particularly the low productivity of sectors in which women entrepreneurs operate, the difficulty in accessing capital for expansion and the need to reconcile business with domestic activities and the propensity to view business as part of an overall livelihood diversification strategy. Carter et al. (2003) explored the factors associated with the use of equity capital in women led firms. Hypotheses examined the influence of human and social capital on the likelihood of seeking equity funding, access to funding sources, bootstrapping techniques and development of financial strategies. They suggested women obtaining higher levels of education may increase their likelihood of obtaining funding.

Handy et al. (2002) examined women entrepreneurs in a particular segment of the nonprofit sector in India to determine which factors influence such self-selection. Their research confirms findings by other scholars that nonprofit entrepreneurs receive a high payoff from promoting social causes. Mankelaw and Merrilees (2001) developed a model of entrepreneurial marketing for rural women. This model has a number of similar attributes with existing entrepreneurial models. The distinguishing feature is a grassroots approach to marketing, a local groundedness, principally through informal social networks that provide the bases for marketing activities: opportunity seeking, information collection, the innovation, and the marketing strategy.

While research on women entrepreneurs is extensive in developed countries, little has been done in this area in non-OECD and developing economies. Hisrich and Ozturk (1999) focused on the characteristics, performance, and problems of women entrepreneurs in one developing economy Turkey. They focused on the characteristics, performance, and problems of

women entrepreneurs in one developing economy Turkey. The results indicate that while the women entrepreneurs exhibited many similarities with their counterparts in other countries they differed in other aspects such as in their reasons and motivation for starting a venture and problems encountered. They suggested that the theories regarding women entrepreneurs based on developed economies need to be carefully examined before being applied to non-OECD and developing economies.

Research Hypotheses and Methodology

Marketing problem is the biggest problem faced by women entrepreneurs. Women entrepreneurs incessantly face the problems in marketing their products. It is one of the core problems as this area is mainly dominated by males and even women with adequate experience fail to make a dent. Women entrepreneurs also find it difficult to capture the market and make their products popular. Lot of the women entrepreneurs have imperfect organizational set up to drive in a lot of money for canvassing and advertisements. They have to face severe competition from organized industries. They have also to face a stiff competition with the men entrepreneurs who easily involve in the promotion and development area and carry out easy marketing of their products with both the organized sector and their male counterparts. Such a competition ultimately results in the insolvency of women entrepreneurs (Masood, 2011). This study focuses on the marketing problems of women entrepreneurs in Tamilnadu and suggests marketing strategies for women entrepreneurs in Tamilnadu. We propose following hypotheses to study the marketing problems faced by women entrepreneurs in Tamilnadu.

Hypothesis (H₁): Higher the level of sales promotion leads to higher business success of women entrepreneurs.

Hypothesis (H₂): Higher the level of networking and clustering leads to higher business success of women entrepreneurs.

Hypothesis (H₃): Higher the level of brand and technology leads to higher business success of women entrepreneurs.

Hypothesis (H₄): Higher the level of pricing strategy leads to higher business success of women entrepreneurs.

Hypothesis (H₅): Higher the level of visual media advertisement leads to higher business success of women entrepreneurs.

Hypothesis (H₆): Higher the level of print media advertisement leads to higher business success of women entrepreneurs

Hypothesis (H₇): Higher the level of distribution channel leads to higher business success of women entrepreneurs.

Hypothesis (H₈): Higher the level of direct selling leads to higher business success of women entrepreneurs.

Hypothesis (H₉): Higher the level of product variety leads to higher business success of women entrepreneurs.

The type of research design used in this research is descriptive in nature. Primary data was collected for the present study by structured questionnaire to the women entrepreneur. This was pre-tested by conducting a pilot study through which primary data was collected from 50 women entrepreneurs and the questionnaire

restructured. The study is micro in nature and data were collected from 291 women entrepreneurs. Every effort was taken to make sure that all the areas were covered in Trichy, Tamilnadu. A reliability of managerial decisions depends on the quality of data. The quality of data can be expressed in terms of its representative feature of the reality which can be ensured by the usage of a fitting data collection method. We have used structured questionnaire consists of a set of well formulated questions to probe and obtain responses from the women entrepreneurs. Questions with likert rating scale with five point scale consist of rating from strongly agree, agree, neutral, disagree and strongly disagree. We have used Probability sampling is also known as 'random sampling or chance sampling'.

Data Analysis

Factor analysis is a general name denoting a class of procedures primarily used for data reduction and summarization. We have tested Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is an index used to examine the appropriateness of factor analysis. High values (between 0.5 and 1.0) indicate factor analysis is appropriate. Values below 0.5 imply that factor analysis may not be appropriate. In our study Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is 0.685 and it indicate factor analysis is appropriate. Bartlett's test of sphericity is significant. A factor matrix contains the factor loadings of all the variables on all the factors extracted. Factor scores are composite scores estimated for each respondent on the derived factors. Percentage of variance is the percentage of the total variance attributed to each factor.

Table 1 : Total Variance Explained

Factors	Total Variance	Percentage of Variance Explained	Cumulative Percentage of Variance Explained
Sales promotion	2.912	11.202	11.202
Network and cluster	2.544	9.785	20.987
Brand and technology	2.083	8.012	28.999
Pricing	1.677	6.450	35.450
Visual media advertisement	1.656	6.369	41.819
Print media advertisement	1.612	6.200	48.019
Distribution	1.500	5.768	53.787
Direct selling	1.413	5.435	59.222
Product variety	1.370	5.271	64.493

Extraction Method: Principal Component Analysis.

Determine based on percentage of variance - In this approach, the number of factors extracted is determined so that the cumulative percentage of variance extracted by the factors reaches a satisfactory level. What level of variance is satisfactory depends upon the problem. However, it is recommended that the factors extracted should account for at least 60 percent of the variance. Our factor analysis result shows that the factors extracted account for 64 percent of the variance.

Table 2 : Rotated Component Matrix

Variables	Sales promotion	Network and cluster ment	Brand and technology ment	Pricing	Visual media advertise	Print media advertise	Distribution	Direct selling	Product variety
Price Bundling	0.71								
Sales Promotion	0.659								
Price Discounts	0.714								
Network And Cluster		0.626							
Profit Making		0.85							
Brand Value And Awareness		0.817							
Network And Cluster Helps To Increase Product Variety		0.791							
Segmentation			0.662						
Latest Trend And Technology			0.643						
Brand Name			0.775						
Franchising			0.483						
Cost Plus Pricing				0.84					
Equal to the market price				0.87					
Radio and television ads					0.523				
Social media ads					0.709				
CSR activities					0.646				
Customer relation				0.501					
Word of mouth						0.778			
Flyers, pamphlets and newspaper					0.631				
Through retail							0.601		
Through wholesale							0.763		
Through agents and broker								0.744	
Direct selling								0.751	
Targeting									0.809
Product variety									0.574

Rotation method: varimax

We have used 27 variables in the questionnaire. They are follows Price bundling, sales promotion, price discounts, networking and clustering, profit making, brand value awareness, networking and clustering helps to increase product variety, segmentation, latest trend and technology, brand name, franchising, cost plus price, equal to the market price, radio and television advertisement, social media advertisement, CSR activities, customer relationship, word of mouth, flyer, pamphlets and newspaper advertisement, retail, wholesale, agent and broker, direct selling , targeting and product variety. Above 27 variables have been reduced as 9 variables using principle component analysis and varimax rotation like sales promotion, networking and clustering, brand and technology, pricing strategy, visual media advertisement, print media advertisement, distribution channels, direct selling and product variety.

Then we have used multiple regression modelling. The model has covered 84% variance and F value is significant. Among the above 9 marketing factors, the product variety, sales promotion, distribution channel and brand and technology have higher impact on business success to the women entrepreneurs. Following the above 4 factors, the direct selling, print media advertisement, networking and clustering and visual media advertisement have impact on the women entrepreneur business success. Pricing strategy does not have impact on women entrepreneur's business success.

Table 3 : Contribution of the Marketing Factors to the Success of Women Entrepreneurs

Marketing factors	Unstandardized coefficients		Standardized coefficients	T - value	Sig.
	B	Std. Error			
Constant	3.729	0.025	-	150.991	0.000
Sales promotion	0.319	0.025	0.439	12.908	0.000
Network and cluster	0.074	0.025	0.102	2.987	0.003
Brand and technology	0.153	0.025	0.210	6.165	0.000
Pricing	0.043	0.025	0.060	1.755	0.080
Visual media advertisement	0.053	0.025	0.073	2.158	0.032
Print media advertisement	0.089	0.025	0.122	3.602	0.000
Distribution	0.169	0.025	0.232	6.824	0.000
Direct selling	0.106	0.025	0.146	4.304	0.000
Product variety	0.418	0.025	0.574	16.882	0.000

Business success of Women Entrepreneurs = 3.729 + 0.319 (sales promotion) + 0.074 (networking and clustering) + 0.153 (brand and technology) + 0.043 (pricing strategy) + 0.053 (visual media advertisement) + 0.089 (print media advertisement) + 0.169 (distribution channel) + 0.106 (direct selling) + 0.418 (product variety).

If one unit sales promotion increase leads to 0.319 units business success increase. When one unit networking and clustering increase leads to 0.074 units business success increase. While one unit brand and technology increase leads to 0.153 units business success increase. If one unit pricing strategies increase leads to 0.043 units business success increase. When one unit visual media advertisement increase leads to 0.053 units business successes increase. While print media advertisement increase leads to 0.089 units business successes increase. If one unit distribution channel increase 0.169 units business successes increase. When one unit direct selling increase 0.106 units business successes increase. While one unit product variety increase leads to 0.418 units business success increase.

Product variety has impact on women entrepreneur business success. Hence Hypothesis (H_6) which says higher the level of product variety leads to higher business success of women entrepreneurs is accepted. So there is a significant relationship between Product variety and business success of women entrepreneurs. Similarly sales promotion has impact on women entrepreneur business success. Hence Hypothesis (H_1) which says higher the level of sales promotion leads to higher business success of women entrepreneurs is accepted. So there is a significant relationship between Sales promotion and business success of women entrepreneurs. At the mean time,

Distribution channel has impact on women entrepreneur business success. Hence Hypothesis (H_7) which says higher the level of distribution channel leads to higher business success of women entrepreneurs is accepted. So there is a significant relationship between distribution channel and business success of women entrepreneurs.

As a result, Brand and technology has impact on women entrepreneur business success. Hence Hypothesis (H_3) which says higher the level of brand and technology leads to higher business success of women entrepreneurs is accepted. So there is a significant relationship between brand and technology and business success of women entrepreneurs. In the same way, Direct selling has impact on women entrepreneur business success. Hence Hypothesis (H_5) which says higher the level of direct selling leads to higher business success of women entrepreneurs is accepted. So there is a significant relationship between direct selling and business success of women entrepreneurs.

Print media advertisement has impact on women entrepreneur business success. Hence Hypothesis (H_8) which says higher the level of print media advertisement leads to higher business success of women entrepreneurs is accepted. So there is a significant relationship between print media advertisement and business success of women entrepreneurs. Similarly, Networking and clustering has impact on women entrepreneur business success. Hence Hypothesis (H_2) which says higher the level of networking and clustering leads to higher business success of women entrepreneurs is accepted. So there is a significant relationship between networking and clustering and business success of women entrepreneurs.

Visual media advertisement has impact on women entrepreneur business success. Hence Hypothesis (H₃) which says higher the level of visual media advertisement leads to higher business success of women entrepreneurs is accepted. So there is a significant relationship between visual media advertisement and business success of women entrepreneurs. Pricing strategy does not have impact on women entrepreneur's business success. Hence Hypothesis (H₄) which says higher the level of pricing strategy leads to higher business success of women entrepreneurs is rejected. So it is proof that there is no significant relationship between pricing strategy and business success of women entrepreneurs.

Conclusions and Limitation

The researcher has studied various marketing strategies for women entrepreneurs in Tamilnadu. The results of the study have indicated that the women entrepreneurs have to improve their marketing strategies like Short-term incentives to encourage the purchase or sale of a product or service. Which means women entrepreneur should use sales promotion as their marketing strategy, Sales promotion such as price discount and price bundling. Branding helps buyers in many ways. Brand name helps consumers identify products that might benefit them. So women entrepreneurs should improve their brand and technology according to the latest trend.

Networking and clustering leads to improve the business success of the women entrepreneurs. Networking and clustering such as profit making, brand value and awareness, network and cluster helps to increase product variety of the women entrepreneur's business. Visual media advertisement and print media advertisement are paid form of non -personal presentation and

promotion of ideas, goods, or services by an identified sponsor is essential for the women entrepreneur's business success. Visual media advertisement and print media advertisement such as radio and television advertisement, social media advertisement, CSR activities, customer relation, flyers and pamphlets and newspaper.

Network made up of the company, suppliers, distributors, and ultimately customers who partner with each other to improve the performance of the entire system. Which means distribution channel should be effective in their business. Distribution channels are retail and wholesale. Direct selling or direct communication with carefully targeted individual consumers has impact on women entrepreneur's business success. Direct selling includes direct sales force, agents and brokers. Using a successful brand name to launch a new or modified product in a new category or increasing product variety is the major strategy to improve business success of the women entrepreneurs. Product variety such as targeting and product line

The results of the study have indicated that pricing strategy should not affect the business success of the women entrepreneurs. These marketing strategies lead to improve the business success of the women entrepreneurs. However the researcher has given some valid suggestions to improve marketing strategies to the women entrepreneurs. The women entrepreneurs look in to the deficient areas and implement the suggestion wherever it is applicable. The main limitation of the study is that we have considered only Tamilnadu, further researchers can extend the study by applying it in the other states of India.

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