



ANALYSIS OF DEMOGRAPHIC FACTORS ON PERCEPTIONS OF INVENTORY MANAGERS TOWARDS HEALTHCARE PERFORMANCE

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ABSTRACT

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The healthcare sector has proven as one of the most crucial sectors, especially during a situation like COVID-19 pandemic. Further, healthcare is an area of concern that significantly influences economic growth. Higher rates of mortalities have contributed to the issue of whether inventory managers are paying adequate attention to the ongoing pharmacy and other inventory-related operations in striving for productivity optimization. This paper aimed to determine whether there is a substantial difference between individual factors regarding the perceptions of inventory managers on healthcare performance. This research applied the quantitative method through IBM-SPSS statistics, and 200 inventory managers employed at different public healthcare facilities of Punjab, Pakistan were randomly selected for the research survey. The research found that any difference in the attributes of demography does not affect the perceptions of inventory managers towards healthcare performance and is equally essential regardless of their demographic attributes. This research is useful to the department of health, to the body of knowledge, public and private healthcare facilities. Further research could examine the mediation of demographic attributes in back-log inventories and healthcare performance.

Contribution/Originality: This study is one of very few investigating the dimensions of disruptive factors and inventory control. The study contributes, identifying the dimensions within the constructs, to the existing literature as well as the reliability of those constructs and their relevant dimensions.

1. INTRODUCTION

Inventory is an asset with a significant effect on organizational performance (Syed, Mohamad, Rahman, & Suhaimi, 2016). Traditionally, inventory was only taken as the trade-off between ordering and holding costs, but in recent years, it directly linked with the efficacy of firms (Rashid, 2016). Enterprises need to embrace constant and effective inventory practices (Ondari & Muturi, 2016). However, public organizations are fundamentally different from for-profit organizations (Rashid & Amirah, 2017). Therefore, public healthcare facilities are increasingly espousing in inventory management systems (Wei, Wang, & Qi, 2013).

Besides, inventory control is identical for augmented efficiency (Ondari & Muturi, 2016). In contrast, the infant and maternal mortality rates are drastically increasing with a ranking of 149th position in world healthcare. On discovery of raised rate of mortality, the healthcare of Punjab found expiration and stock-out of curative medicines

at Punjab Institute of Cardiology, lab equipment for Hepatitis C vaccine, and shortage of critical medicines at the emergency department of various healthcare facilities (Rashid, Amirah, & Yusof, 2019). The worseness shows the irregular distribution of resources. Besides the improved healthcare performance reduces mortality rate (Rashid & Amirah, 2017).

It is concluded that the performance at healthcare is a problem, and deteriorations and shortage of life-saving medicines reveals the inability. Since the department involves life-saving products, the researcher concluded that establishing empirical findings of individual factors on the perception of inventory managers towards healthcare performance at Punjab, Pakistan necessitates.

1.1. Research Objectives and Hypotheses

The primary focus was to evaluate the differences between individual factors on the perception of inventory managers towards healthcare performance in Punjab, Pakistan. The individual factors were gender, age, marital status, education, and years of service (experience); for which five hypotheses were formulated as given below:

- H1: *There is a significant difference in perceptions of inventory managers from different gender groups toward healthcare performance.*
- H2: *There is a significant difference in perceptions of inventory managers with different marital status toward healthcare performance.*
- H3: *There is a significant difference in perceptions of inventory managers from different age groups toward healthcare performance.*
- H4: *There is a significant difference in perceptions of inventory managers with different educational backgrounds toward healthcare performance.*
- H5: *There is a significant difference in perceptions of inventory managers with different years of service (experience) toward healthcare performance.*

2. LITERATURE REVIEW

The role of inventory control is to maintain specific stocks and is indispensable from fruit carts to multinational organizations (Syed et al., 2016). Different companies manage inventories differently by ensuring product availability at a low cost (Syed et al., 2016). Therefore, it is imperative to avoid exorbitant costs by aligning inventory control (James, 2013). Effective inventory control avoids overstocking, inaccurate inventories, expiration, and profligate for better performance (Ketzenberg & Ferguson, 2008). However, ineffective inventory virtually disrupts profitability and productivity (Hashmi, Amirah, & Yusof, 2020). Thus, large firms require tremendous efforts for sustained performance (Araujo, Gadde, & Dubois, 2016).

According to Khanchanapong et al. (2014), inventory control is procedurally more complex at public institutions with capacity indicators (quality, flexibility, delivery, and cost) to evaluate the performance. Besides, service quality at health care may also include several factors like; affordability, ease, and short procedural activities, readily available information, increased consumerism, short wait time for specific procedures, low cost, and curative product availability (Lunt, Hardey, & Mannion, 2010). Previous literature found a significant effect of pharmacy inventory to improve quality in non-profit hospitals (Syed et al., 2016).

3. RESEARCH METHOD

A questionnaire was utilized to acquire data through survey method (Hashmi, Amirah, & Yusof, 2020a). The data was collected face to face from respondents of public healthcare facilities of Punjab province on five questions about individual or demographic factors, i.e., gender, marital status, age, education, and years of service (experience).

The population scope of this study was 2,899 listed public healthcare facilities of Punjab. Since the population

was covering a vast geographic and dispersed area of the province, therefore, the cluster sampling technique with multistage clustering and simple random sampling was performed to reach an adequate sample size. The public healthcare facilities of Punjab were divided into nine divisions, and one district from each division was randomly chosen to constitute a sampling frame. In addition, there was homogeneity between the groups and heterogeneity within the groups, which distinguish cluster sampling from other sampling techniques. The sampling frame constituted 343 public healthcare facilities; out of that, a minimum of 200 randomly selected respondents constituted a sample size to generalize the population characteristics (Hair, Black, Babin, & Anderson., 2010; Rashid & Tawfiq, 2020). A sample of 200 is considered as adequately sufficient (Awang, 2015). In addition, the researcher used an additional 20 percent of the sample size by considering the expected proportion of losses in sample size. Therefore, a total of 220 inventory managers were the sample size for this study that is enough to generalize the population characteristics. The significant differences in demographic attributes were analyzed through Statistical Package for Social Science (SPSS), and two hypotheses were tested through the t-test, and the rest of the hypotheses were examined in ANOVA (Yusof, Awang, Jusoff, & Ibrahim, 2017).

4. RESULTS AND DISCUSSION

From the total respondents of 220, only 207 respondents returned filled questionnaires with a response rate of 94 percent that is greater than 75 percent, which is excellent (Rashid, Amirah, Yusof, & Zaliha, 2020c). Further, seven questionnaires were incomplete with missing data and were discarded. Consequently, 200 questionnaires were recognized as valuable for further analysis (Hashmi, Amirah, & Yusof, 2020b).

Table 1 is indicating the t-test results for hypotheses H1 and H2. For hypothesis H1, the results found no significant differences in perceptions of male and female inventory managers towards healthcare performance, because of p value= 0.981 > 0.05. Therefore, the hypothesis H1 was rejected since p -value > 0.05. While the hypothesis H2 suggesting p value= 0.558 > 0.05, that means there are no significant differences in perceptions of inventory managers with different marital status towards healthcare performance. Since the p -value > 0.05, the hypothesis H2 was also rejected.

Table-1. Summarized t-test Results for Hypothesis (H1 and H2).

H1: Gender		Levene's Test		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
HP	Equal variances assumed	3.556	.061	.024	198	.981	.005	.225
	Equal variances not assumed			.027	27.120	.979	.005	.196
H2: Marital Status		Levene's Test		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
HP	Equal variances assumed	.628	.429	-.587	198	.558	-.096	.164
	Equal variances not assumed			-.578	72.244	.565	-.096	.166

Note: HP, healthcare performance; Levene's Test, Levene's test for equality of variances.

The hypotheses (H3, H4, and H5) were tested through ANOVA. Table 2 suggesting the p values H3= 0.127, H4= 0.899, and H5 = 0.217 that are greater than 0.05. Hence, these three hypotheses were rejected by expressing that there is no significant difference in perceptions of inventory managers from different age groups, with different educational backgrounds, and with different years of service (experience) towards healthcare performance, respectively.

Table-2. Summarized ANOVA Results for Hypotheses (H3, H4, and H5).

Hypotheses		Sum of Squares	df	Mean Square	F	Sig.
H3: Age	Between Groups	3.893	2	1.947	2.083	.127
	Within Groups	184.107	197	.935		
	Total	188.000	199			
H4: Education	Between Groups	1.024	4	.256	.267	.899
	Within Groups	186.976	195	.959		
	Total	188.000	199			
H5: Years of Service (Experience)	Between Groups	5.451	4	1.363	1.456	.217
	Within Groups	182.549	195	.936		
	Total	188.000	199			

Table 3 expressing the summary of hypotheses and their decisions based on the result findings. Hypothesis H1 proposed that there would be a significant difference in the view regarding health performance among male and female inventory managers. However, the hypothesis was not supported, which shows that male and female inventory managers are both concerned about healthcare performance at public healthcare facilities of Punjab.

Hypothesis H2 proposed that there would be a significant difference in the view regarding health performance among the groups with the different marital status of inventory managers. However, the hypothesis was not supported. The findings show that regardless of the marital status of respondents, they are well aware of the vital role of healthcare performance for public health.

Table-3. Summary of hypothesis.

Hypotheses	Hypotheses Statement	Decision
H1	There is a significant difference in perceptions of inventory managers from different gender groups toward healthcare performance	Not Supported
H2	There is a significant difference in perceptions of inventory managers with different marital status toward healthcare performance	Not Supported
H3	There is a significant difference in perceptions of inventory managers from different age groups toward healthcare performance	Not Supported
H4	There is a significant difference in perceptions of inventory managers with different educational backgrounds toward healthcare performance	Not Supported
H5	There is a significant difference in perceptions of inventory managers with different years of service (experience) toward healthcare performance	Not Supported

Hypothesis H3 proposed that there would be a significant difference in the view regarding health performance among inventory managers from different age groups. Whereas, the hypothesis was not supported by ANOVA results and indicated that all inventory managers, regardless of their ages, are concerned about healthcare performance. This could be due to their exposure with the passage of time in their ages.

Hypothesis H4 proposed that there would be a significant difference in the view regarding health performance among inventory managers with different levels of educational backgrounds. However, the results of ANOVA did not support the hypothesis by suggesting that all inventory managers, regardless of their educational levels, are concerned about healthcare performance. This might be due to their educational background and the departmental training programs who realized them the importance of public health and the role of performance in enhancing the capability.

Hypothesis H5 proposed that there would be a significant difference in the view regarding health performance among inventory managers with different lengths of service (experience). The hypothesis was rejected by test results of ANOVA, indicating that inventory managers, regardless of their length of service (experience) are concerned about healthcare performance. This might be due to their experience, from a few years to many years that leading them to transform their stance and turn into cognisant for healthcare performance.

The results of all hypotheses were not supported, which expressed that any difference in the attributes of demography does not affect the perceptions of inventory managers towards healthcare performance and is equally

vital for every inventory manager regardless of their demographic attributes (Rashid, 2016).

5. CONCLUSION

The findings concluded that individual factors are imperative and generically, is overlooked by researchers with more emphasis on the performance-related issues at public healthcare facilities. The perceptions of respondents were not significant for any factor showing that regardless of gender, marital status, age, education, and experience, the viewpoint regarding healthcare performance is unique for each group. This is because; the seriousness of direct or indirect responsibility of theirs' toward public health and their perceptions could have generated severe concerns in public healthcare facilities of Punjab.

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