

Original Research Article

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## Correlation of Managerial Skills in Relation to 2D:4D Digit Ratio of Public and Private Organization Managers

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### ABSTRACT

Managers work with different people and in different environment so to respond the market required interpersonal skills and analytical skills that help in managing it with different things and good decision making by evaluating the situation in the future uncertainties. This research examines the demographic variables and correlation of managerial skills in relation to 2D:4D Digit Ratio of public and private organization managers. The methodology entails a survey of 60 managers i.e. 30 from public organizations and 30 from private organizations, were selected randomly and for calculating 2D:4D digit ratios subsample of 30 managers (15 from public and 15 from private organizations) was selected randomly for the present study in Udaipur city, India. An online questionnaire technique was used for data collection. Secondary data was also used to get a better insight into the research problem. Frequency, percentage, Karl Pearson correlation coefficient was used for analysis of data. The major limitation of this study is that it was conducted in Udaipur city alone, while the work culture of organizations other than in Udaipur city may be different. Results showed that the personal and demographic profile of the respondents of both public and private organizations revealed that they belonged to middle age group i.e. 35-45 and had more than 10 years of experience. Non-significant association of both public and private organization manager's managerial skills when digit ratios were calculated, this may be due to small sample size.

### Keywords

Correlation, Digit Ratio, Management, Managerial skills, Organizations

### Article Info

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### Introduction

Simply, managerial skills represent a knowledge and ability of the individual on a managerial position to fulfill some specific managerial activities or tasks. This knowledge and ability can be learned and practiced. However, they also can be acquired through practical implementation of required activities

and tasks. Therefore, each skill can be developed through learning and practical experience from the individuals.

Skills are very important for a manager's career. If managers are skilled they move towards the career development. But career development is effected by the interpersonal skills and the analytical skills differently at

every level of management. Effectiveness of managers is highly depends largely on their ability and desire for their own personal growth and development in career in the organization. Skills have positive effect on the career development of the managers in the organizations but at top level of management it is more affected and enhanced (Siddiqui *et al.*, 2015).

Managers work with different people and in different environment so to respond the market required interpersonal skills and analytical skills that help in managing it with different things and good decision making by evaluating the situation in the future uncertainties. This current investigation is also concerned with the ratio between the length of the second finger or index finger in relation to the length of the fourth finger or ring finger, which is referred to as 2D: 4D digit ratio.

The digit ratio and its association to the phenotypic characteristics has been the focus of much research in recent year. Digit ratio has been seen to show sexual dimorphism in relative and absolute lengths of index (2D) and ring finger (4D). The index to ring finger ratio has been reported to be smaller in males as compared to females. The concept of digit ratio is popularized by an evolutionary psychologist Prof John Manning. Prenatal androgens have important organizing effects on brain development and future behavior. The second-to-fourth digit length ratio (2D:4D) has been proposed as a marker of these prenatal androgen effects, a relatively longer fourth finger indicating higher prenatal androgen exposure. 2D:4D has been shown to predict success in highly competitive sports. Yet, little is known about the effects of prenatal androgens on an economically influential class of competitive risk taking—trading in the financial world.

Successful management in the financial markets requires more than correct beliefs about the value of securities. Managers must also possess confidence enough to place their bets, risk preferences high enough to place bets of meaningful size, and the ability to process information quickly enough to keep one step ahead of competitors. Furthermore, managers engaged in “noise” or “high-frequency” management require additional skills because their rapid style of management is a demanding physical activity: they engage in extended periods of vigilance and visuomotor scanning, and they must react quickly to place an example before other managers arbitrage it away. The physiological demands made on managers raise the possibility that success in the markets depends as much on managers biological traits as it does on the truth of their beliefs.

The digit ratio is the ratio of the lengths of different digits or fingers typically measured from the midpoint of bottom crease (where the finger joins the hand) to the tip of the finger then the second digit score is divided against the fourth digit score for the final measure. It has been suggested by some scientists that the ratio of two digits in particular, the 2nd (index finger) and 4th (ring finger), is affected by exposure to androgens e.g. testosterone while in the uterus and that this 2D:4D ratio can be considered a crude measure for prenatal androgen exposure, with lower 2D:4D ratios pointing to higher prenatal androgen exposure. The 2D:4D ratio is calculated by dividing the length of the index finger of a given hand by the length of the ring finger of the same hand. A longer index finger will result in a ratio higher than 1, while a longer ring finger will result in a ratio lower than 1.

Only a few papers have explored the relationship between the 2D:4D ratio and risk-taking. No correlation between the

2D:4D ratio and their risk-taking measure in a sample of male undergraduates, but they suggest this may have been due to the small and ethnically heterogeneous sample (Apicella *et al.*, 2008). The performance of a sample of male financial day traders and find that those with lower 2D:4D ratios, indicating higher prenatal testosterone levels, earn significantly higher returns. While higher returns may be indicative of greater risk-taking, they are not a direct measure of risk attitudes and hence these results could be driven by other factors such as confidence, intelligence, attention or reaction time (Coates *et al.*, 2009).

In the only 2D:4D risk study to examine both men and women, that no significant correlation between digit ratio and risk-taking for men and a weak positive correlation for women. These results are intriguing since one might well expect that men, with their higher levels and wider variance in testosterone, would show stronger organizational effects (i.e., a higher 2D:4D correlation with risk-taking) than women (Sapienza *et al.*, 2009). A number of studies have shown a correlation between the 2D:4D digit ratio and various physical and behavioral traits so that we can also see the correlation of managerial skills in relation to 2D:4D digit ratio of managers chooses that study.

### **Objective**

To study the correlation of managerial skills in relation to 2D:4D digit ratio of public and private organization managers.

### **Materials and Methods**

The study was conducted with employees of public and private organizations within the municipal limits of Udaipur city of Rajasthan state. The list of managers was procured from the offices of public and private organization.

A total of 60 managers i.e. 30 from public and 30 from private organizations from this list were selected randomly. For calculating 2D:4D digit ratios subsample of 30 managers (15 from public and 15 from private organizations) was selected randomly.

The questionnaire technique was used to get the information from the respondents. The questionnaire comprised of subtopics namely general management, problem solving skill, time management skill, decision making skill, interpersonal communication skill, motivation, and stress management and Autometric 2.2 Software was used for measuring 2D:4D Ratios. The collected information was suitably tabulated and analyzed in terms of frequencies, percentage, and Karl Pearson correlation coefficient.

### **Results and Discussion**

Simply, managerial skills represent knowledge and ability of the individual on a managerial position to fulfill some specific managerial activities or tasks. This knowledge and ability can be learned and practiced. However, they also can be acquired through practical implementation of required activities and tasks. Therefore, each skill can be developed through learning and practical experience from the individuals.

### **Background information**

Profile of manager according to each background variables has been explained as follows:

An insight into figure 1, 2 and 3 highlights that majority of respondents in both public and private organization were males (70% and 67%), in the age group 35-45 years (56% and 64%) and had 11- 20 years' experience (63% and 62%).

**To study the correlation of managerial skills in relation to 2D:4D digit ratio of managers**

Using an emerging measure of prenatal androgens, the ratio between the length of the second and fourth digits of the hand, we explore the managerial skills of both public and private organizations. This 2D:4D ratio is a well-known sexually dimorphic marker, with men having lower ratios than women on average. Garbarino *et al.*, (2008) find that a lower 2D:4D ratio (i.e., signifying higher levels of in utero testosterone) predicts greater risk taking behavior for both men and women in a financially motivated risk-taking task, supporting a biological basis for risk taking behavior.

This section attempts to highlight the correlation of managerial skills in relation to 2D:4D Digit Ratio of Public and private Organization Managers. The data was analyzed and correlation coefficient (r value) was computed to obtain values signifying correlation between Managerial Skills and

Digit Ratio in Public Organization Managers. The Table 1 above depicts the relationship between managerial skills and 2D:4D digit ratio among public organization managers. The findings of research objective suggest that general management, problem solving and time management did not correlate with either left or right 2D:4D, nor did decision making, interpersonal communication skills, motivation skills and stress management. Non-significant results occurred at 5 per cent level of significance. This seems to be due to the relatively small sizes of our sub-samples. In light of this result, it does not surprise that no association has previously been found when the two hands digit ratios were combined into a unique indicator calculated as a simple average of both hands (Sapienza *et al.*, 2009 and Garbarino *et al.*, 2011). The evidence in general, and subsample of public organization managers, in particular (n=15), seems to suggest that significant associations are more likely to start being detected when sub-group analysis were conducted with samples of few hundreds, rather than few numbers, of subjects (Apicella *et al.*, 2008).

**Table.1** Correlation of Managerial Skills in relation to 2D:4D Digit Ratio of Public Organization Managers

n=15

| Variable | LHDR    | RHDR    | p-value | p-value |
|----------|---------|---------|---------|---------|
| GM       | -0.1742 | -0.0558 | 0.535NS | 0.846NS |
| PS       | -0.4114 | -0.3133 | 0.128NS | 0.256NS |
| TM       | -0.0516 | -0.0462 | 0.857NS | 0.870NS |
| DM       | 0.0678  | 0.0067  | 0.810NS | 0.981NS |
| ICS      | 0.1605  | 0.1214  | 0.568NS | 0.667NS |
| M        | 0.067   | 0.1171  | 0.812NS | 0.678NS |
| SM       | 0.4485  | 0.4111  | 0.093NS | 0.128NS |

LHDR= Left Hand Digit Ratio, RHDR= Right Hand Digit Ratio, GM= General Management, PS=Problem Solving, TM= Time Management, DM= Decision Making, ICS= Interpersonal Communication Skills, M= Motivation, SM= Stress Management, NS= non-significant at 5% level of significance

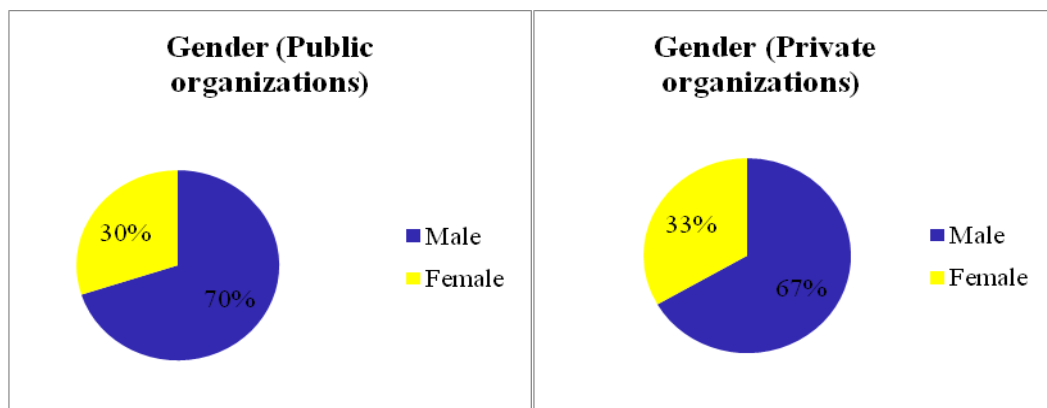
**Table.2** Correlation of managerial skills in relation to 2D:4D digit ratio of private organization managers

n=15

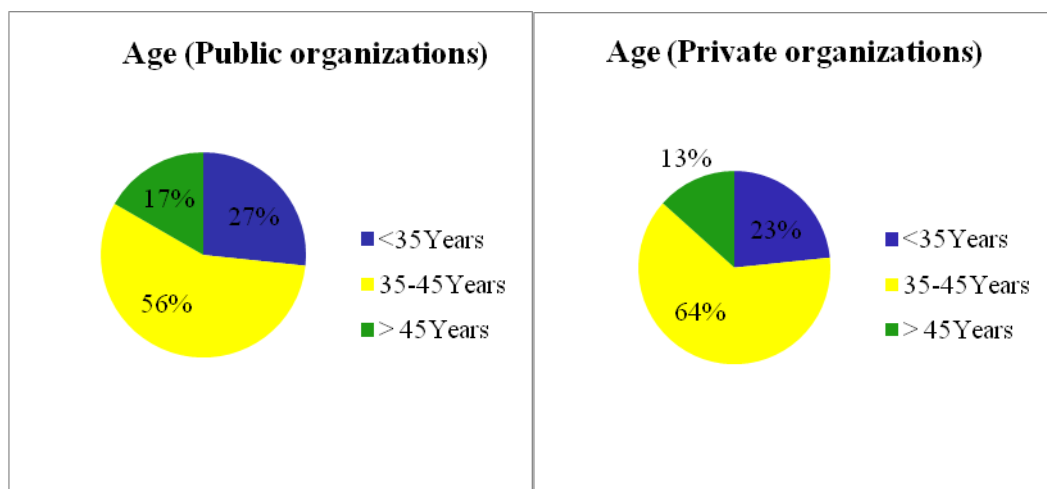
| Variable | LHDR    | RHDR    | <i>p</i> -value | <i>p</i> -value |
|----------|---------|---------|-----------------|-----------------|
| GM       | -0.1159 | -0.1224 | 0.683NS         | 0.665 NS        |
| PS       | 0.4057  | 0.0944  | 0.134 NS        | 0.738 NS        |
| TM       | 0.0429  | 0.2552  | 0.879 NS        | 0.358 NS        |
| DM       | -0.1146 | 0.0841  | 0.686 NS        | 0.766 NS        |
| ICS      | -0.3258 | -0.1213 | 0.237 NS        | 0.667 NS        |
| M        | -0.0788 | 0       | 0.782 NS        | 1 NS            |
| SM       | 0.2747  | 0.3636  | 0.322 NS        | 0.183 NS        |

NS= non-significant at 5% level of significance

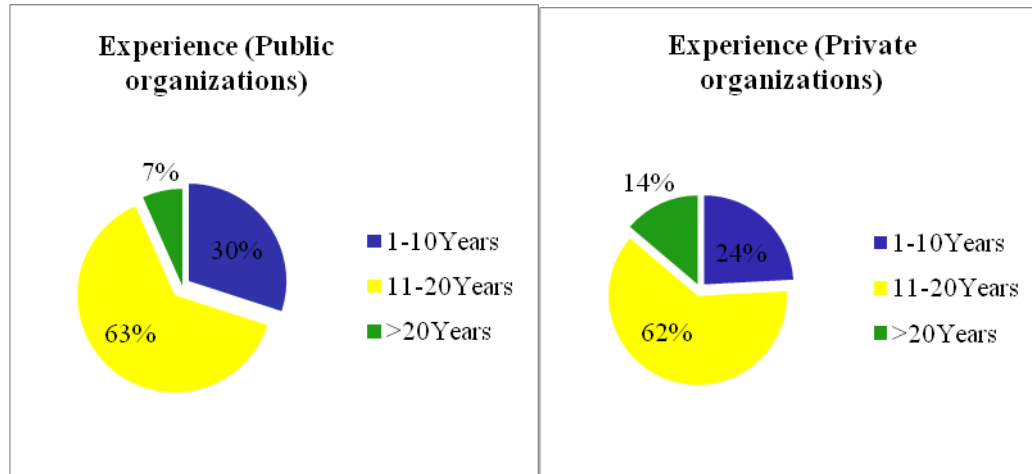
**Fig.1** Percentage distribution of respondents by gender



**Fig.2** Percentage distribution of respondents by age



**Fig.3** Percentage distribution of respondents by experience



Similar is the case with our results because the sample size was limited. Further studies can be taken up to see the correlation between manager's managerial skills and 2D:4D digit ratio with large number of sample.

Table 2 reports pair wise correlations among some of the main variables of interest. The association of general management and interpersonal communication skills with LHDR and RHDR is negative correlation but not statistically significant and also motivation skills and decision making is negatively correlated with left hand but not statistically significant or motivation skills with right hand there is no correlation followed by association of problem solving, stress management and time management is positive correlation but not statistically significant. However, the null result for 2D:4D may be due to the small sample size. There have been no studies that have yet to demonstrate a relationship between managerial skills and digit ratio.

Thus, non-significant association of both public and private organization managers managerial skills with digit ratios was calculated, this may be due to small subsample sizes.

In conclusions, managers work with different people and in different environment so to respond the market required interpersonal skills and analytical skills that help in managing it with different things and good decision making by evaluating the situation in the future uncertainties. Thus, it can be concluded that personal and demographic profile of the respondents of both public and private organizations revealed that they belonged to middle age group i.e. 35-45 and had more than 10 years of experience. Public and private organization managerial skills did not correlate with 2D:4D left hand digit ratio and right hand ratio of both the organizations. Not significant results were seen when the data was analyzed by Karl Pearson correlation coefficient test. The reason of non-significant correlation may be because of small sample size. Similar results were also seen in a study conducted by Apicella *et al.*, (2008) on digit ratio and financial risk taking preferences in the year 2008.

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