The present study focused on the construct of prakriti (Adult temperament) as described in Ayurveda’s Tridosha theory. Two specific objectives were formulated to empirically evaluate two premises of the theory. Firstly, the basic humours (dosha) determine the constitution (of body) and physiological processes which in turn regulate the motor activities, cognitive processing and the personality dispositions together the behaviour. The second premise of the theory is that since people differ genetically for the predominance of the doshas (Charaka, Sushruta Samhita), people are likely to be categorized into seven types: three pure types, three dawandawajas and the sannapatika.

In order to verify both the premises, two hypotheses were accordingly formulated and appropriate statistical techniques were applied. The findings of the factor analysis revealed neither a general factor nor dosha specific factors, rather most of the components were of small groupings significantly not loading more than four variables in any case (Table 4.1). Even the major most component (Factor-1) explained less than 11 per cent of the total variance. Most of the groupings were either revealing grouping of psychological variables or physiological variables, i.e. there seems to be some interplay of methodological variance, e.g., body mass index (a constitutional variable), which is
Considered to be authentic indicator of *kapha dosha* remained in isolation, while skin conductance was taken as the indicator of *pitta* (a physiological process) because it is associated with underlying greater activity of sweat glands, which thereby is an expression of high metabolic activity. It also did not load with other behavioural indicator of *pitta dosha*.

Ayurvedic texts predicted high intelligence in *pitta dosha* people, whereas findings showed negative relationship between intelligence and skin temperature, which is *pitta* characteristic as hyperthermia represents high metabolic rate. So, both the variables should be positively related but the empirical findings did not attest to the theorem (Factor-7). Similarly, factor 3rd though showed converging of physiological and psychological measures, yet the content were paradoxical. The blood pressure and anxiety happened to be negatively related, whereas, the host of psychological literature affirmed that blood pressure and anxiety go side-by-side i.e. high anxiety elevates blood pressure (Schwartz, Feller, Axel and Perlmutter, 2001). Although, a few reports of negative relationship are also available e.g., Young, Nesse, Weber and Julius (1998). However, the factor also showed negative relationship between
tough-poise and anxiety. It goes with some psychological sense that tough poise people are likely to be free from anxiety (Cattell, 1970).

Several indicators of vatta were included in the battery e.g., reaction time, reading speed, walking speed and tapping speed. As per theory, it was at least, expected that all these variables shall emerge into one principal component, whereas these vatta variables loaded on three such components. Although, tapping speed and walking speed loaded on single factor (Factor-2), but reaction time variables formed a separate component (Factor-1). Whereas reading speed loaded with intelligence on a separate factor. This fact suggests that task contents may have its own variance other than the underlying process. Therefore, walking speed, reading speed and tapping speed are distinct, despite temporal/speed aspect of behaviour. Tapping and walking were largely motor activities, whereas reading was a cognitive activity, therefore reading speed was related to intelligence (Carroll, 1993). Therefore, reactivity and activity emerged as separate components. Reaction time in fact is a measure of activity, whereas tapping, walking and reading speed were the measures of activity. Tridosha theory assigns all to vatta dosha.

Such differentiation had been studied and discussed a lot in the temperamental studies e.g., Strelau (1983) and Eliasz (1981). Further,
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Buss (1995) also distinguishes two facets of activity temperament in terms of endurance (i.e. vigour) and speed (i.e. tempo). Whereas, the Ayurvedic texts assign vigour and enduring activities (which requires strength) to kapha dosha and tempo to vatta dosha. To sum up the picture emerging from the findings of factor analysis thus revealed specificity instead the underlying generality of behavioural dimension, therefore, reaction time, tapping output, walking speed and reading speed loaded on different components. Considering together, it can be concluded that humoural (constitutional), physiological and behavioural features did not converge due to their specific variance. Hence, absence of the general factor or dosha specific factors is contrary to the contention of the theory.

LIMITATIONS:

Though, the present study empirically negates one of the premise of the tridosha theory, yet it can be taken with caution as the experiment was conducted with several limitations. It was a blended study of rational – theoretical approach (to select dosha specific variables) and an eclectic approach (for the operationalization of the selected variables). While doing this the battery of the measures had some experimental measures which was objective e.g. chronometry, walking time, reading lines, and tapping output, loudness etc. All these were vatta measures. Some
measures were physiological e.g., muscle tone, pulse rate, blood pressure, skin conductance and temperature which were quite variable in their very nature (muscle potentials change from moment to moment, so the skin conductivity). Therefore, these measures had their own domain of variance, incidentally all these measures indicate *pitta dosha*. At the same time, others were psychometric measures e.g., 16 PF, Culture Fair Intelligence Test, and PGI Memory Scale. This category of measures represent all *doshas*. Therefore, it was a big limitation that method specific variance could not be controlled and interacted with *dosha*. The only similar empirical attempt to develop *dosha* measures was by Joshi (2004), in which the qualitative estimates of the *tridosha* were obtained, however, the author applied an algorithmic heuristic approach and the data were qualitative as commonly used by the ayurvedic doctors and claimed some success. But, the qualitative measures and the algorithmic heuristic approach appear to be much less rigorous in comparison to the approach followed in the present study. Moreover, the factor analysis and objective measurement are established tools of construct validation procedures (Anastasi and Urbina, 2002).
Suggestions

It is suggested that an empirical evaluation on the basis of the sample of 200 subjects with lot of method specific variance and unequal representation of three *doshas* is not sufficient enough to reject the contention of the theory with an ancient wisdom and continual practice. More studies are required in which these limitations would be met out. A battery should have equal loadings of the measures related to the three *doshas*. Further the studies should restrict to one type of methodologies be it experimental or physiological or psychometric.

Theory based cluster analysis was attempted in order to verify the typology suggested into seven types. It was a sort of restricted factor analysis as done by Eysenck (1970) in case of three dimensional theory of personality.

The cluster analysis of 200 unselected samples virtually categorized them into 4 clusters only, since three clusters had not even more than 2% cluster membership. Clusters 3, 4 and 7 had 2, 4 and 2 members only. Thus, the deviation from the theory was noticed in terms of the number of clusters or types of people.

However, the size of the present sample was moderate (200) and quite possible that if the sample is taken into thousands, these 3 clusters...
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might have greater membership sufficient enough to describe them. But this was one of the limitations of the present study.

The four major clusters which were obtained were either pure type or dawnandwaja type. The pure types were so described as there was a predominance of one dosha while other two doshas were secondary. But in the case of dawandwaja, the third dosha was of low quantity.

The final diagnosis of prakriti was done on the basis of cluster comparison in terms of highest or lowest cluster centres on different variables. There after dosha were assigned on the basis of key features as described in ayurvedic texts Charak Samhita (Sastri and Chaturvedi, 1989) and Sushruta Samhita (Ghanekar, 1977), while assigning dosha to various clusters it was noticed that in these texts the thinkers have mentioned dosha to the higher side of a trait and were silent about the lower side of the trait e.g. all three thinkers consented that pitta dosha is to high intelligence level but not very clear that what dosha be assigned to members in a cluster of low intelligence level. Only Charak assigned it to vatta dosha because vatta leads to instability which was interpreted in terms of poor decision making ability. Similarly, Sushruta assigned extraversion to vatta on the basis of sociability, impulsivity and outgoingness but silent on traits, which are typical of introversion.
Moreover, the texts had disproportionately low representation of behavioural traits related to various dosha, e.g., independence v/s subduedness and has not been assigned to any dosha. Another contradiction noticed was in terms of tough-poise versus tender-minded emotionality where both the poles of the dimension were assigned to the same dosha i.e., kapha (Table 4.25). Cattell, Eber and Tatsuoka (1970) have empirically established that the traits were opposing and placed on the different poles of the dimension.

Cluster centers of various variables in one cluster also revealed certain deviation from established psychological findings e.g., good memory, high intelligence and good attention span had been described as kapha, pitta and vatta dosha respectively, whereas memory and attention are correlated abilities of general intelligence which are considered to be the base of multifactor aspect of intelligence (Cattell, 1971; Strenberg, 1985; Gardner, 1993 and Frangou, Chilins & Williams, 2004).

In the end, it can be suggested that in order to identify the prakriti types in the population much bigger population with limited measures should be studied e.g. body mass index, intelligence, pulse volume, pulse rate, skin conductance and personality features, like, anxiety and extraversion should be included. Psychomotor activities may be included
in such studies which show a distinct role of endurance i.e. power and also of speed.

The consensus which emerged in few typical characteristics are such that *kapha* people have high body mass index, high endurance, and low variability in various performances, whereas *vatta* people show low body mass index, high output on motor activities requiring less strength and endurance. *Pitta* people indicate high intelligence, high skin conductance and high temperature. These measures may be included for quick diagnosis of *prakriti* of a person.