



## Original Research Article

# AI Chat GPT technologies in health sciences: A study with mathematical statistic correlation and probabilistic mission induction

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## ABSTRACT

The purpose is to study the effect and influence of Chat GPT application in education technology on health sciences post graduates (PGs) task-initiation, applying the “cross-sectional” model through scholars and PG’s. The study observes the connections and relationships, i.e., correlations among the frequency-of-Chat GPT interface plus pace of starting Academic-educational errands, using a normalized/systematized uniform (homogenous) scaling to errand induction next to lately built scaling to measure Chat GPT use. Using probability—statistical models bi variate correlation plus analysis-of-variance (ANOVA), such that it will detect patterns (signatures) of errand start amongst ‘non-users’ and ‘end-users’ of diverse versions of Chat GPT. Our findings show that the big depressing/off-putting correlation ( $\rho = -0.511$ ,  $p < 0.01$  statistically not significant) among Chat GPT use plus chore-initiation, signaling that fueled application of Chat GPT might be linked through of-late/delayed issue-start. Remarkably, non-native-users formed the top-bias to induce brief induction ( $M = 3.215$ ) than Chat GPT end-users. Likewise, variants within chore start activities were studied amongst the end-users-of two versions-of Chat GPT, through the V4version-users showing new helpful errand induction results. Our results feature the nuanced-effect of Chat GPT over Academic-educationalists’ deeds, implying that whilst Chat GPT might function as valued Academic-utility-tools, its use might impact accepted-conventional errand induction behavioral-conducts. These intuitions stress the requirement for the weighed method for making amendments and to incorporate artificial intelligence (AI) utility-tools within the Academic-educational locational-settings, as their latent to vary PGs and research scholars errand behaviors and conducts plus self-control.

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## 1. Introduction

Incorporating artificial-intelligence (AI) characterizes and epitomizes the substantial paradigm-shift within the advancing—progressing Academic domain, and orbit, merging computational-simulation and statistical modeling’s plus psychological intuitions and perceptions to re define didactic policies as well as various software hardware utilities and tools.

Artificial intelligence has distinct roles in industry Academia and educational industry, as of accelerating and

assisting the data and information access, accessibility and contact to augmenting the collaborative and communicating educational-knowledge learning plus rationalizing the job and work management.<sup>1,2</sup> Such scientific research technical and technological development aims to determine to surpass outmoded anthropological abilities of human-beings for the problem-solving, ingenuity, perseverance as well as the cleverness, through the scientific researchers for instance,<sup>3</sup> highlighting the AI’s potentials and possibilities to transmute didactic frame works.

Nonetheless, beside these developments franking, the AI’s functional-role in industry-Academia is ironic, giving

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advantages in Academic-educational concert also work load administration whilst endorsing or sponsoring a dependance reliance which might hinder, impede, hamper or encumber Academic success.<sup>4</sup> The preamble of AI-tools and utilities, containing Chat GPT, into didactic settings and surroundings encompasses their inspiration to mental as well as ‘cognitive-dimensions’, affecting not only Academic-excellency, nevertheless also perilous/critical-thinking and rationale, hypothesis/memory reminiscence, problem-solving skills, as well as societal connections.<sup>5–7</sup>

Such results highlight the AI’s treble and twofold capability to supplement and hypothetically experiment the PG’s and doctoral students and scholars reasoning as well as psychosomatic mental strength. Counter to this framework of scientific research and technical and finally technological amalgamation, the Academic discussion drifts concerning identifying the nuanced insight, dynamics-insight among the application of technology as well as Academic performances, specifically deferment plus project instruction and launch. A researcher portrays delay as the postponement (deferral) of issues, emphasizing it’s effects in the pressure, stress and strain, tension plus throughput.

Such actions, shaking throughout 70% of PG-students as well as PhDs exhibits a stimulating blockade or obstacle to the Academic accomplishment, impaired and intensified by the incline within the cardinal-digital means media-broadcasting rendezvous.<sup>8,9</sup> Whilst machinery, incorporating and involving ICTs, believes, havens(harbors) prospective disruptions and interferences, which also suggest a well-designed, well-planned pathways-to alleviate adjournment, encouraging improved and healthier-task administration.<sup>10,11</sup> Amongst the analyses over the postponement, it is the focal point to commence the hypothesis of commencement of work start. Brief launch, conspicuous but concerned to adjournment, contains the capability to start the works deprived of any more delay.

Such paradigm, hypothesis shifts/transfers attention as of the expansive transparent developmental pattern-signatures of waiting issues, works to the individual activity of work initiation<sup>12</sup> has detected work beginning, start obstacles, problems as predominant midst individuals through the disorder termed as ADHD (Attention- deficit/hyperactivity-disorder), more prominence its implication as a transparent Academic-obstacle.

The discrimination amongst postponement as well as chore induction is fundamental, highlighting the essential requirement in aimed interferences to encouragement PGs in incapacitating the preliminary work-oriented apathy, inertia, lethargy, the challenge hypothetically lectured via tools and utilities of the artificial intelligence for instance, the like Chat GPT. Researching immersed into the connection of AI tools and utilities plus Academic-activities, Chat GPT arises as a principal idea of investigation.

So, the AI’s double functioning-role in advancing adjournment over the/through the single handedly and assisting the work-start over the added demonstrates the composite connection amongst the knowledge machinery. And the application of the technology and also student’s activities, and behaviors.

Whereas precise educations and investigations feature an upsurge in adjournment propensities to the application of Chat GPT usage technology,<sup>13–15</sup> whereas the others distinguish the artificial intelligence probable and its application, predominantly work-related chat bots, to provision work start as well as decrease deferment.<sup>15,16</sup>

Thus, the traced (i.e., nuanced) transformations concerning the Chat GPT descriptions/versions advance and spread highlight this connection. Relative and virtual analyses disclose that even though the artificial intelligence AI Chat GPT version 3.5 computed—generated probable still with a reduction of data accuracy (though scanty sparse and scarce), the AI-GPTver4 has been glorified for its precision also expert proficient efficacy.<sup>17</sup> Nonetheless, still A-GPT ver4, regardless of its innovations, and yet requires to absolutely reproduce anthropological-like human comprehension plus innovation within the collaboration.<sup>18</sup>

The AI Chat GPT ver 3.5 gives wide understandings in to the contented computational info data generation, while AI-GPT ver 4 is predictable in distributing comprehensive, scholastically applicable and pertinent gratified, emphasizing its dominance and preeminence for simplifying didactic rendezvous.<sup>8,19,20</sup> Incorporating the investigations and observations over the work start through the checking of AI-Chat-GPT reports illustrates the prospective of artificial intelligence to outdo its functional-role as the implement or of Academic didactic assignation for a conceivable basis-of disruption and interference. Therefore, the study routes the complex correlation amongst the many AI-Chat-GPT-forms and versions as well as their impact over the Academic didactic performs, highlighting the unemployed possibility of all these innovative technologies for progressing the work start amongst the PGs and also PhD students and scholars.

## 2. Aims and Objectives

The purpose is to analyze the complexities of dynamics and composite-dynamics amongst the AI Chat GPT procedural use, i.e., application as well as work-start amongst the postgraduates, scholars, and PhDs students within the higher-learning institutions and in higher-learning teaching and training. Pivotal to such analysis there are few decisive and critical research/ investigational queries, more elaborately, how do you make the application AI-Chat-GPT connect through the point of and to which one start works? Whatever is the connection amongst work-start plus applying the distinct versions/forms of the AI-Chat-GPTs. Is there any deviations or distinctions within the work-

start concerning entities who apply the AI-Chat-GPTs plus individuals who do not, and amongst the various users-operators, workers, consumers of the AI-Chat-GPT-version 3. as well as the version 4. By what means the detailed concepts and structures linked to start of the work, for example, instantly starting the work, initiating the issues, the sureness in preliminary issues, interference endurance, and so on., contrast amongst the end-users and non users-of the AI-Chat-GPT-versions as well as concerning the end-users-of the AI-Chat-GPT-version 3 and also the AI-Chat-GPT-Ver 4.

### 3. Design Techniques and Methods

#### 3.1. The study-design

The study experimentally—investigates the impact of the AI-Chat-GPT technology management over the scope to who are the scholars, PGs initiating the issues. This exploration model-prototype combines and fit in the Adjourment-scaling<sup>8</sup> to evaluate the start of the work, plus a modern-scale to determine to gauge the AI-Chat-GPT-technology custom, practice to evaluate the frequency-of the AI-Chat-GPT-technology through Academic-issues. Numerous mathematical-statistical probabilistic analyses absolutely focus on every exploration, every investigative quest, expedition, and queries extending as of bi variate correlation for comparing, for distinguishing the mean-averages. This kind of approach was selected for exploring very understandably the prospective influences as well as associations amongst the AI-Chat-GPT application of technology management also start of the work. Thorough explanations of the applicant enrollment, collecting the data and with various procedures and processes, plus data analysis strategies of the analysis of the data follows in the individual subsequent subdivisions.

#### 3.2. Demographics

This study recruited and included four hundred and twenty-seven participants, out of which two hundred fifty-one of female category and one hundred seventy-six of male category. Didactic levels were labeled into one hundred and forty PhD-students, plus two hundred and eighty-seven students of postgraduate (PG) category. The use of the AI-Chat-GPT technology differed amongst the applicant contestant's, through the one hundred and eight with ver. 4-premium, one hundred eighty-seven using free Ver. 3.5, and lastly one hundred and thirty-two candidates are of neither the users nor the end-users.

#### 3.3. Trial dimensions fortitude or resolve

Prior to the investigation, a trial-study was done through eighty-two defendants/plaintiffs to predict circa ~ the trial test extent required to attain adequate and appropriate

**Table 1:**

Quantity-variables	Group	Rate (Freq.)
Sex	Woman	2 5 1
	Men	1 7 6
Didactic level/ occupation/ professional-career	Doctor of Philosophy (PhD)/(Doctor of Medicine (DM)/Master of Chirurgiae (MCh)	1 4 0
	Postgraduates	2 8 7
	Prem.V4-versions	1 0 8
	Free-V3.5version	1 8 7
Ver. of the AI-Chat-GPT technology	The AI-Chat-GPT not the users/ and not the end-users	1 3 2
	Over-all	42 7

mathematical-statistics dominance. The trial-size involved twenty-four not of the users-of AI Chat GPT, thirty-nine end-users of the AI Chat GPT-ver.3.5, plus nineteen end-users of primary investigation, accounts in a desired power of 0.8 plus an alpha  $\alpha$  rank of 0.05. Such computations are established, such that the experiment model-size-of (sample) forty-nine yet not the users or end-users, eighty end-users of the AI-Chat-GPT-ver. 3.5, plus thirty-nine end-users-of AI-Chat-GPT-Ver.4 might be needed to perceive the noteworthy transformations amongst the conglomerates, i.e., cluster-groups. These “experiment-model—sizes” confirm and guarantee the healthy and vigorous assessment as well as acceptable generality and simplification of the outcomes to the precise scholars-student population participated over the Academic-didactic start of the work. The following computational-information and data represents the information of the experiment-size and computing procedure and process.

Mean-Average 1

Mean-Average 2

Mean-Average 3

The standard-deviation(SD) = 0.9600

$\alpha \leq 0.05$

power  $\leq 0.8$

cluster-provision 1 (distribution/allocation):24

cluster-provision 2 (distribution/allocation):39

cluster-provision (distribution/allocation):19

Computation: the sample-size which are needed for the clusters one to three are as follows:

$n_1 = 49$ ,  $n_2 = 80$ , and  $n_3 = 39$ .

#### 3.4. Data—acquisition

In this study, we employed a multi-faceted approach to data collection tailored to engage a diverse array of participants across various academic fields.

The data acquisition is done through the application and then by amalgamation of ease selection (sampling), burgeon (i.e., snowball/abronia elliptica specimen-sampling) samplings, plus goal-directed-sampling techniques. The foremost allocation approach for the surveys was by the digital-media-platforms such as WhatsApp as well as social-media platforms Facebook, Instagram's, and twitters, etc. The digital media conglomerate entailed studies-like the Ph.D. scholars and students, the characteristics swiftly reachable because of active and contemporary Academic didactic informative net works.

Concurrently, social-media conglomerates were applied to extend a wider listeners and spectators, involving diverse Academics streams, disciplines/subjects. The snow ball sample performance augmented the virtual (simulated data) allocation. Primarily, plaintiffs plus social group as of separate Academic institutions plus populations were persuaded to contribute to the survey surrounded by their individual as well as Academic-didactic spheres, hence hypothetically strengthening the spread afar the primary conglomerates. The exploration of data and start of work done by using the scale referred through was applied which consists of 6 objects. The scaling's were contained assertions.

### 3.5. Application of AI-Chat-GPT and its use

A six-item (objects) scale was built on to evaluate the AI Chat GPT technology management amongst the global institutes' scholars and postgraduates. The scale-levels uses a diverging/(branching) procedure to target plaintiffs to objects significant to their Academic-didactic-levels. Like, doctoral-students and scholars retort to some axioms and declarations and equivalences. After acquiring the data, using the advanced MATLAB statistical tools the clinic-statistical analysis was accomplished with an indigenously built sophisticated-software to address the inquiries. The investigative procedures and processes are given under.

#### 3.5.1. Computing the merged scoring

Primarily, amalgamated-multiple scorings in the start of the work also the AI Chat GPT technology use were computed by summing the scoring of every corresponding entry.

#### 3.5.2. The spearman correlation (the RQ1, RQ2)

The spearman correlational investigation was done to uncover and verify the connection among the AI-Chat-GPT technology use and start of the work.

#### 3.5.3. Evaluation of mean-averages (the RQ3)

In order to contrast the average-mean scores, a one way analysis of variance(ANOVA) was performed independently for every grouping (not the users, end-users of the AI-Chat-GPT technology Ver. 3.5, plus the end users-of the AI-Chat-GPT technology Ver.4).

### 3.6. Evaluation of mean-averages (the RQ4)

Independent statistic through the ANOVA-tests were accomplished to evaluate the average-mean-scores of every object-item amongst the 3 categories (i.e., not the users, end-users of the AI Chat GPT technology Ver.3.5, plus end-users of the AI Chat GPT technology Ver. 4).

#### 3.6.1. Scaling

The constancy/consistency, dependability, regularity, reliability, stability and for uniformity of scales were computed, and close-fitting see-through extreme consistency and dependability, as demonstrated through the Cronbach  $\alpha$ -coefficients-of 0.973 and 0.988 for the Task Initiation scale and ChatGPT usage scale, respectively.

**Table 2:** The statistic consistency, dependability (reliability)

	Cronbach $\alpha$ -alpha	Number-of-objective-items
Start-of the work	0.973	6
The AI Chat GPT-technology use	0.988	6

### 3.7. Findings

The research findings achieved as per the aims and objectives; discussion is given here one by one. Firstly, how do you make the application AI-Chat-GPT connect through the point of and to which one start-works?

**Table 3:** Correlations of start of the work with the AI Chat GPT technology use

	Spearman- $\rho$	p
Start of the work-the AI Chat GPT technology use	-0.511**	0.000

\* p< .05,\*\* p<.01.

The correlation of Spearman –rank (Table 3) shows the effective minus association ( $\rho$ =-0.511,  $p$ =0.000) amongst the start of the work plus the AI Chat GPT-technology use.

Secondly, whatever is the connection amongst work-start plus applying the distinct versions/forms of the AI-Chat-GPTs. The Spearman- $\rho$  in the start of the work plus the AI Chat GPT-technology use was -0.925 in the version V3.5 plus -0.974 in the ver V4, correspondingly, through the statistical p Values<0.01.

Thirdly, is there any deviations or distinctions within the work-start concerning entities who apply the AI-Chat-GPTs plus individuals who do not, and amongst the various users-operators, workers, consumers of the AI-Chat-GPT-version 3. as well as the version 4.

In line with the average-mean-scores displayed, the not users of the AI Chat GPT-technology application have had the maximum normal-scoring within the start of the work

**Table 4:** Association amongst the start of the work plus the AI Chat GPT-technology application use as of Ver. 3.5 as well as Ver 4.0

	Version 3.5		Version 4.0	
	Spearman's rho	p	Spearman's rho	p
Start of the work – through the AI Chat GPT management	-0.925**	0.000	-0.974**	0.000

Significant-correlation at 0.01 level (2-tailed).\*\*

(3.21), afterward the end-users of premium Ver.4 at the 3.000, plus decisively, irrevocably the end-users-of free libre Ver.3.5 at 2.75.

And lastly, by what means the detailed concepts and structures linked to start of the work, for example, instantly starting the work, initiating the issues, the sureness in preliminary issues, interference endurance, and so on., contrast amongst the end-users and not the users-of the AI-Chat-GPT-versions as well as concerning the end-users-of the AI-Chat-GPT-version 3 and also the AI-Chat-GPT-Ver 4.

The Table 5 sum up the findings of various-ANOVAs, exposing and illuminating the different interactive results throughout start of work variables for not the users of Chat GPT AI technology plus end-users of the two unlike Ver. of the involvement, ver. 3.5 plus ver. V4. Non-users are extremely probable to begin the works directly, through the maximum average-mean-of 3.833, yet Ver.4 end-users demonstrate significant gains within this range over the Ver. 3.5 end-users.

Analogously and likewise, the certainty for beginning the works is significantly greater for Ver.4 end-users 3.444 than for not the users of Chat GPT as well as the AI Chat GPT technology Ver.3.5 end-users. Ver 4 end-users also go beyond further conglomerate-clusters in order to accomplish the tasks early of time limits plus commencing the works irrespective of their involvedness, through maximum average-mean-scores-of 3.444 plus 2.756, correspondingly. Nevertheless, whilst not the users of AI Chat GPT are advance at struggling disruptions plus preventing delay, the AI Chat GPT Ver.4 end-users are extensively improvement throughout Ver. 3.5 of the AI Chat GPT technology application end- users by the average-mean score of 2.444.

#### 4. Discussion

The investigation through the analysis of correlation proven the sizable yet nix association amongst the AI Chat-GPT technology use as well as start-of-work which proposes that as the AI Chat GPT technology use advances, the closeness proximity through the starting of the works shrinkages. Which may gives confidence over the utility-tool succeeding scholars as well as postgraduate-students genuine and innate spur otherwise conventional learning procedural-strategies. The contrast amongst the AI Chat GPT technology Ver. 4 and also Ver. 3.5 end-users show the nuanced benefit in

those with the quality premium. Ver.

The V4 end-users stated more certainty for starting of the works, faster capability to start the works, as well as swiftly attempted further direct works. Which indicates that the augmented cardinal-feature-manifestations of the AI Chat GPT technology Ver. 4 offer large collaboration for projection as well as implementing the Academic-didactic tasks.

The presentation improvement amongst the Ver.4 end-users can be accredited/credited to the progressive functionalities restructuring the Academic-didactic work flows as well as the mental inspiration to enlarge the rate of their monetary fiscal- asset within the best facility and provision, nurturing an extra well-organized method to work-job managing. In distinction, not the AI Chat GPT- users demonstrated a substantial affinity to start the works, perchance as a preemptive rate gauge to balance for the withdrawal of artificial intelligence aid, indicating a deliberate approximate to the time management.

Furthermore, non AI Chat GPT technology application users score was high in enduring disruptions also preventing delay, demonstrating that they might foster plus trust over the added precise self regulation management lacking trusting over the technological utility-tools and scientific research technical tools as well. Which guides whilst utility-tools like artificial intelligence (AI) ChatGPT technological entities can be favorable, usual conventional works like task-management procedures which stand-in chastisement plus effort likewise have characteristic métiers. Together, such outcomes illustrate the compound back-and-forth amongst the use of technology plus Academic-didactic performance. Further, they recommend that though the tools for instance, AI Chat GPT technological tools can bid considerable sustenance, their impression over the conduct is stretchy as well as differs grounded on Ver plus mental rejoinders persuaded through the dissimilar methods of contact with both Free. Version Vs. Premium Version. This speak impacts a acute and analytical viewpoint over mixing the artificial intelligence utility-tools within the Academic-didactic surroundings/setups, encouraging in a well-adjusted method that contemplates separate variances within the technology implementation as well as varied approaches postgraduates service within work-administration/management.

**Table 5:** The t statistic-ANOVA-findings - start of work through the AI Chat GPT-technology Ver.

		<b>t-statistic</b>	<b>diff</b>	<b>Sig. (2-tailed)</b>	<b>Mean Difference</b>
Non users	Start-of-work	38.022	95	0.000	3.21528
Free-V3.5	Start-of-work	29.970	151	0.000	2.67434
Premium-V 4.0	Start-of-work	30.366	75	0.000	3.00000

## 5. Conclusions

The implementation of the AI Chat GPT technology through the scholars and postgraduates of course, has hosted a change in Academic-didactic exertion plus poise, through the capabilities of the technologies foremost to the insight which works might be skilled through the nominal individual contribution. This accessibility and user-friendliness, conflicting abruptly through outmoded conventional, further labor intensive method to the Academic-didactics, may unintentionally stand-in a tendency to delay, as PGs could delay the works, depend on the competence of the AI Chat GPT technology use to recompense in postponement. Conversely, the accelerating behavior trace is examined amongst the exceptional AI Chat GPT technology end-users, who demonstrate the depleted bias or inclination about the delay. Which might attribute to the mental influence of their fiscal venture within the utility-tools, in which the ambition to augment the significance of the acquired provision gives confidence extra appropriate work-start. Such dynamic-underscores the obsession interaction amongst the tools of technological(scientific research) as well as postgraduates task customs, prominence the requirement in watchful rendezvous through the artificial intelligence to equilibrium and its paybacks in contradiction of possible influences over the Academic-didactic chastisement or stream.

## 6. Sources of Funding

None.

## 7. Conflict of Interest

None.

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