MBIS673 Research Project Report
on

"Exploring the Dual Role of Technostress Creators and Inhibitors: Implications for AI Anxiety, Job Satisfaction, and Technology Use"

ABSTRACT

As technology grows increasingly prominent in all aspects of the workplace, technostress has become a significant challenge to both employee productivity and overall health inside organisations. This study seeks to explore how techno stressors influence employees' AI anxiety, job satisfaction, and technology use. Using the comprehensive frameworks developed by (Nisafani et al., 2020).and Mahapatra et al. (2024). this research investigates how these factors contribute to or mitigate AI anxiety and overall productivity.

The conceptual model evaluates the interconnected relationships between the technostress creators and inhibitors influence AI anxiety, which impacts productivity. According to the hypotheses, technostress creators (e.g., overload and complexity) have a positive relation with AI anxiety, which reduces productivity. Technostress inhibitors (e.g., technical support and self-efficacy) have been suggested to minimise AI anxiety and increase productivity. The analysis finds limited support for these assumptions, with significant connections for some predictors, indicating complicated dynamics. While technostress complexity highly indicates AI anxiety, inhibitors have differing effects, indicating that additional factors may influence AI anxiety.

The Technostress creators; techno-overload, techno-complexity and techno uncertainty, are identified as significant contributors to AI anxiety, a form of psychological strain that can negatively impact job satisfaction and productivity (Tarafdar et al., 2007; Ragu-Nathan et al., 2008). In contrast, technostress inhibitors such as self-efficacy and technical support function as neutralisers, possibly mitigating the negative impacts of AI anxiety. (Nisafani et al., 2020). Therefore, study investigates how the balance of stress-inducing and stress-mitigating factors affects employee perceptions and behaviours towards AI tools (Venkatesh et al., 2003).

INTRODUCTION

As artificial intelligence (AI) tools becoming increasingly important in modern workplaces, they provide both immense advantages for efficiency and creativity, as well as productivity concerns for employees. Among these issues is technostress, a form of stress generated by the complexity and demands of using AI tools (Ragu-Nathan et al., 2008; Tarafdar et al., 2007). Previous research has focused on technostress's drives, such as system overload and task complexity, which lead to workplace strain and lower job satisfaction (Mahapatra & Ford, 2024). However, there has been less emphasis has been placed on understanding the impact of technostress inhibitors factors such as self-efficacy, technical support, in mitigating these stressors and reducing concern about artificial intelligence (AI). These inhibitors may be significant in creating a balanced work environment in which the advantages of AI tools can be utilised without overwhelming employees. therefore, this study aims to fill this research gap by examining both the creators and inhibitors of technostress, investigating their effects on AI anxiety, job satisfaction, and productivity within organizational environments.

Moreover, while AI tools can increase productivity and streamline workflows, it also adds new stressors that are different from those connected with traditional tools. Employees frequently experience increased AI anxiety due to fears about job displacement, rapidly evolving AI skills requirements, and the need to constantly adapt to AI tools (Mahapatra & Ford, 2024). As organisations increase their dependence on artificial intelligence, knowing the dual nature of techno stress-inducing (creators) and techno stress-alleviating (inhibitors) factors (Venkatesh et al., 2003). are becomes vital for promoting both productivity and job satisfaction. This study uses a conceptual model to assess the interactions between technostress creators, inhibitors, AI anxiety(strain), and productivity in order to give a thorough understanding of the dual nature of technostress in the workplace. Through hypothesis testing, we aim to determine which aspects of technostress have a significant effect on AI anxiety and productivity, as well as the success of inhibitors in mitigating these adverse effects. The findings are expected to provide useful insights for organisations aiming to promote productive, technologically adaptive, and satisfaction.

In contrast, technostress inhibitors like as self-efficacy and technical support might act as protective techniques, lowering anxiety and allowing employees to interact more favourably with AI tools (Nisafani et al., 2020). However, there are significant gaps in the existing research, which this study attempts to address.

Limited Focus on AI-Specific Technostress. Many existing technostress work fails to distinguish between general technological stress and the specific worries linked with artificial intelligence. Given AI's potential to disrupt existing workflows and bring new types of job-related worries, a dedicated investigation of AI-specific technostress is required to understand its different effects on employee performance (Venkatesh et al., 2003).

Another, potential gap highlighted as Technostress inhibitors which play a moderating role in AI anxiety. While technostress inhibitors like as self-efficacy and technical support are known to reduce overall technostress, their usefulness in decreasing AI-induced anxiety is less understood. Understanding this moderating impact might help organisations develop focused initiatives to promote Adaptability and productivity among employees with AI (Ragu-Nathan et al., 2008).

LITERATURE REVIEW

Craig Brod introduced the word "technostress" in 1984, and it's becoming more of an issue in today's tech-driven industries. (*Brod, C. (1984) Technostress the Human Cost of the Computer Revolution. Addison-Wesley Publishing Company, Reading, USA. - References - Scientific Research Publishing*, n.d.) As information technology (IT) evolves fast and artificial intelligence (AI) becomes more incorporated into our employment, technostress has expanded to include a wide range of stress-related reactions both mental and physical that individuals feel as a result of technology. (Pribbenow, n.d.)This review examines the extensive research on technostress, specifically looking at its causes, strategies for alleviating it, and its impact, especially concerning AI adoption. This review examines the evolution of the concept, identifies key ideas, and evaluates existing research to provide a foundation for understanding the effects of technostress on AI anxiety, job satisfaction, and productivity.

Technostress is now commonly regarded as a type of stress that people suffer as a result of using or being exposed to technology. This condition has two primary dimensions: technostress creators and technostress inhibitors. Technostress factors including techno-overload, techno- invasion, and techno-complexity intensify stress by increasing tasks, limiting personal time, and demanding users learn complicated systems. (Mahapatra & Ford, 2024a). Technostress inhibitors, such as self-efficacy and technical support, help reduce stress by increasing confidence and offering support structures (Ragu-Nathan et al., 2008).

Recent research distinguishes between positive and negative stressors within technostress, particularly with AI integration. The Challenge-Hindrance Stressor Framework classifies AI-driven techno stressors as either challenging (supporting human growth and motivation) or hindering (causing anxiety and resistance) (Chang et al., 2024). Recent research distinguishes between positive and negative stressors within technostress, particularly with AI integration. The Challenge-Hindrance Stressor Framework classifies AI-driven techno stressors as either challenging (supporting human growth and motivation) or hindering (causing anxiety and resistance) (Chang et al., 2024). This dual view contends that, while technostress may cause productivity loss, it may also motivate employees under specific situations, emphasising the complex personal impact of Artificial Intelligence on people.

The concepts of technostress creators and inhibitors are critical for understanding how technostress affects workers in AI-intensive environments. Technostress creators refer to stress-inducing factors such as techno-overload (excessive demands on time and energy), techno-invasion (intrusion into personal life due to constant connectivity), techno-complexity (difficulty understanding and adapting to technology), techno-insecurity (fears about job security), and techno-uncertainty. Nisafani et al. (2020) focus on these stressors, describing how AI concerns contribute to technostress in modern workplace. In contrast, technostress inhibitors are factors that serve to relieve stress. Examples include self-efficacy (confidence in using technology) and technical support (the availability of resources to help with technology-related challenges). These inhibitors have an important role in minimising technostress by increasing employees flexibility and adaptation to change. Venkatesh et al. (2003) give a basic understanding of how techno inhibitors such as self-efficacy helps in understanding the use of Artificial Intelligence. The stronger self-efficacy can reduce AI anxiety and improve user satisfaction with technology. Similarly, Mahapatra et al. (2024) investigate the direct effect of inhibitors on AI anxiety, providing insight into how supportive surroundings might reduce technostress related pressures. Numerous studies have linked technostress with negative effects, particularly in terms of job satisfaction and productivity. Technostress producers may reduce job happiness and productivity by boosting fear about Artificial Intelligence. Tarafdar et al. (2007) show that variables such as techno-complexity and techno-overload can generate strain leading to employee productivity. Further, Ragu-Nathan et al. (2008) highlight how ongoing exposure to technostress creators negatively impacts job satisfaction, making employees feel disconnected and demotivated. The idea of AI anxiety specific stress caused by

AI integration i.e. using of AI tools at workplace is an increasing concern in technostress research. This anxiety is about more than just knowing and using AI tools; it also includes concerns about productivity and the need to adapt to quickly growing, AI tools. Mahapatra and Ford (2024) address this by investigating how AI concern might prevent employees from participating in knowledge-sharing activities, indicating a larger disconnect to collaborate or share knowledge with colleagues at workplace.

While the literature on technostress is immense, there are significant gaps, particular with AI tools related technostress and the impact of inhibitors in various organisational circumstances. Much of the previous research has focused on general technological pressures rather than the specific concern connected with AI. Mahapatra et al. (2024) and other recent studies have begun to address this gap, but more research is needed to fully understand how AI anxiety interacts with other kinds of technostress and impacts productivity and job satisfaction. This study aims to fill these gaps by investigating AI tools stressors and the moderating impacts of inhibitors, including self-efficacy and technical support, in lowering AI anxiety and its negative consequences. By focusing on Artificial Intelligence technostress, this research aims to provide a more detailed understanding of how emerging technologies affect employee productivity because of new AI tools in the workplace.

Despite a substantial research on technostress, significant gaps are present particularly in terms of the specific impact of technostress creators on using AI tools and the success rate of mitigation measures in various workplace environments. Traditional technostress research has mostly concentrated on generalised technology-induced stress, frequently ignoring the various associated with using AI tools. While studies have established that techno-stressors such as overload, complexity, and insecurity are prevalent in technology-driven workplaces, they rarely address the specific anxieties related to concerns of using AI tools skill (Ismail et al., 2023; Turel & Gaudioso, 2018). This absence highlights the need of investigating how AI-tools concerns interact with standard technostress creators and inhibitors to influence productivity. Furthermore, while technostress inhibitors such as technical support have been recognised as possible stress reducers, their influence in AI-intensive environments remains unknown. According to Turel and Gaudioso (2018), competitive cultures can dramatically impact how employees feel and respond to technostress. However, further study is needed to determine if such inhibitors might successfully reduce the increased stress associated with Artificial Intelligence (AI)tools. This study intends to fill these gaps by looking into AI tools specific techno stressors and the influence of inhibitors such as self-efficacy and technical support on employee productivity.

In summary, the literature reveals a well-developed understanding of technostress creators and inhibitors and their impacts on employee outcomes. Technostress studies have evolved throughout time, from early computer systems to powerful artificial intelligence, to represent the changing issues in today's tech-driven workplace. Ragu-Nathan et al. (2008) and Tarafdar et al. (2007) give basic insights into the stresses that influence employees productivity, whereas Mahapatra et al. (2024) and Nisafani et al. (2020) conduct more recent research on the particular consequences of incorporating AI tools. however, there are still gaps, such as AI Anxiety and the complex function of using AI tools as hurdles in many organisational workplace. This study addresses these gaps, presenting a conceptual model better understanding of reducing AI anxiety and encouraging productivity.

RESEARCH DESIGN AND METHOD

This study addresses a significant difficulty i.e. the influence of technology, particularly AI tools, on employee stress and job satisfaction and productivity. Employees are feeling several kinds of challenges as organisations depend more on innovative technologies like; AI tools. They are dealing with the stress of navigating complex tools, considering the risk of Artificial Intelligence tools taking over their job roles, and seeking to remain efficient in the process. Understanding the interaction between stressors and sources of support becomes essential for businesses looking to find strategies to keep employees satisfied and productive.

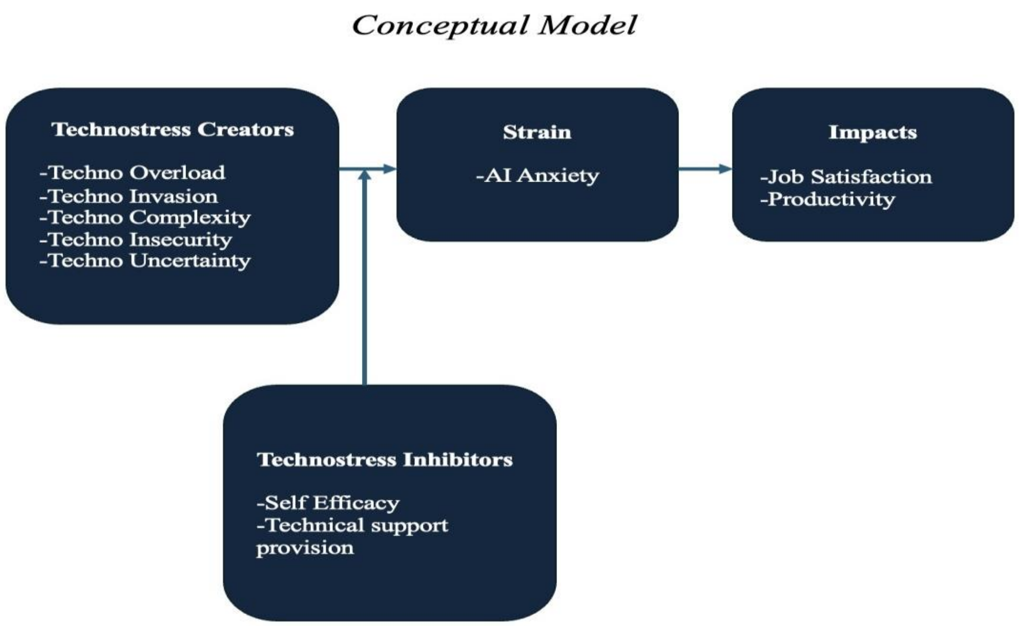
The main focus of this study is how technostress from artificial intelligence (AI) tools impacts employees' anxiety, job satisfaction, and productivity. Specifically, it investigates whether technostress creators, such as becoming overwhelmed by technology or having work-life boundaries violated by increase use of AI tools and decrease productivity. On the other hand, technostress inhibitors like confidence in using AI tools and strong technical support may help reduce anxiety and increase productivity. This study focusses on AI specific technostress, such as concerns about productivity and the need to continually upgrade AI tool skills. As organizations increasingly adopt AI tools, understanding these impacts is crucial, as it brings both exciting potential and significant challenges to the workplace (Mahapatra & Ford, 2024).

The technostress framework (Ragu-Nathan et al., 2008; Tarafdar et al., 2007) explains how technology-related stress impacts employee well-being and performance. Technostress creator, such as being overpowered or invaded by AI are likely to enhance AI anxiety, resulting in lower productivity. In contrast, technostress inhibitors can mitigate these effects, assisting employees in stress management and productivity. This dual focus on creators and inhibitors gives a comprehensive understanding of AI's influence on employees.

The key research question driving this proposal *is " How do technostress creators and inhibitors influence AI anxiety, job satisfaction and productivity at the workplace by use of Artificial Intelligence tools ?"* This study will look at both the negative and positive aspects of technostress, with an emphasis on how causing stress and mitigating parameters interact in the context of Artificial Intelligence tools.

Conceptual Model

Figure 1



This model explains how **technostress creators** and **technostress inhibitors** influence **AI anxiety**, and how that anxiety, impacts **job satisfaction** and **productivity**.

visually represents the flow:

Technostress Creators → AI Anxiety (Strain) → Productivity.

Technostress Inhibitors → AI Anxiety (mitigation) → Productivity.

Hypothesis

Based on the above conceptual model in Figure 1, here are the hypotheses that align with the relationships illustrated as follows:

Hypothesis	Relationship	Description	Expected Direction
H1	Technostress Creators → AI Anxiety	Technostress creators (e.g., overload, complexity) increase AI anxiety.	Positive
H2	Technostress Inhibitors → AI Anxiety	Self-efficacy and technical support reduce AI anxiety.	Negative
H3	AI Anxiety → Productivity	Higher AI anxiety decreases Productivity	Negative
H4	Technostress Inhibitors → Productivity	Technostress inhibitors (e.g. self-efficacy and tech support) enhance productivity by reducing strain.	Positive
H5	Technostress Creators → Productivity	Technostress creators (e.g., Techno overload) decrease productivity	Negative
H6	Technostress Creators → Productivity	Technostress Creators (e.g., Techno uncertainty)decrease→ Productivity	Negative

Methodology

Date Collection Method: The study uses a quantitative research approach. A structured survey questionnaire with close-ended questions will be used to collect quantitative data from employees in a focused workplace like a university (teaching and non-teaching staff) and a few participants from my ex-colleagues including employees from my previously served organisations, covering a mixed range of industry and education intuition, job titles, and demographics. The survey questions will assess technostress factors, AI anxiety, job satisfaction, and productivity with established measurement tools like seven point Likert scale.
Sample Size: The sample size for the survey is set at a minimum of 35-50 responses, small size is useful and appropriate statistical data for analysis without causing too much confusion during interpretation.
Data Collection: Survey questions will be on a poster on the UC campus and via LinkedIn/Facebook. A filter question will be used so that only persons over the age of 18 years

and who use /have used AI tools in the workplace participate in the study. Taking part was optional, and answers were gathered anonymously to safeguard privacy.

Analysis: Regression analysis is used to analyse quantitative data and investigate the potential relationships between technostress creators, inhibitors, AI anxiety, job satisfaction, and productivity. Regression analysis are often used for interpretation of data. It also determines the correlations between these techno creators and inhibitors, Strain and impact on job satisfaction and productivity.

Ethical Consideration: Ethical considerations are essential when researching to ensure the rights and dignity of participants are respected. This research followed strict ethical standards to safeguard the safety and welfare of every participant. Based on the guidelines outline by the Human Ethics Committee, this research is considered low risk, It doesn't involve deception, threat, invasion of privacy ,mental, physical or cultural risk or stress, or gathering of illegal information or of personal information of a sensitive nature about or from individuals. The information gathered is limited to their responses provided in this research project. All data will be anonymous. Anyone is free to withdraw at any time. To do this, simply close your browser window or the application (App) the survey is presented on. Any information you have entered up to that point will be deleted from the data set.

Confidentiality: Data collected for this study will be held for up to 5 years for use in publications and archived thereafter for combining/comparing with future data collections. The results of this research project will be published in an MBIS project report, but you may be assured of the confidentiality of any information that you provide, including comments. You will not be identifiable in any publication. All data will be stored on the University of Canterbury's computer network in a password-protected file and the anonymised data from the study will also be made available to only research supervisor and teammate.

Limitations

While the quantitative method provides helpful outcomes, it has limitations. First, survey data may be subject to self-reporting bias, which occurs when participants might underreport or exaggerate their experiences due to social desirability or recollection concerns (Podsakoff et al., 2003). Also, because the study focused on personnel in AI-intensive contexts, the findings may not apply to all industries, particularly those with minimal exposure to AI (Tarafdar et al., 2007).Despite these limitations, the study aims to uncover the effects of artificial intelligence (AI) use on employees in the workplace . By considering into technostress creators and inhibitors, this study intends to provide a balanced view on managing strain (AI anxiety) and increasing productivity, in order contributing to a more environmentally friendly approach to AI tools at work.

FINDINGS ANS RESULTS

The findings of the study is to explore the structure of technostress (creators and inhibitors) , AI anxiety and job satisfaction are all linked. The survey attempts to gain a comprehensive knowledge of how technostress creators and inhibitors has implication on AI anxiety and job satisfaction.

Based on the above conceptual model in Figure 1, here are the six hypotheses that align with the relationships illustrated as follows:

H1: Technostress Creators → AI Anxiety

Technostress creators (e.g., overload and complexity) increase AI anxiety.

Table 1.1: H1

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.35603251							
R Square	0.12675915							
Adjusted R Square	0.10107559							
Standard Error	4.37590182							
Observations	36							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	94.5059869	94.5059869	4.93542075	0.03307312			
Residual	34	651.049569	19.1485167					
Total	35	745.555556						
	Coefficients	*Standard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	4.9522888	2.43397604	2.03464977	0.04974435	0.00585435	9.89872325	0.00585435	9.89872325
tech over	0.18189775	0.08187763	2.22158069	0.03307312	0.0155024	0.3482931	0.0155024	0.3482931

RESIDUAL OUTPUT					PROBABILITY OUTPUT	
Observation	*Predicted strain*	*Residuals*	*Standard Residuals*		*Percentile*	*strain*
1	7.4988573	-1.4988573	-0.347526		1.38888889	3
2	10.2273236	2.77267644	0.64287448		4.16666667	4
3	11.1368123	1.86318768	0.43199985		6.94444444	5
4	10.0454258	-5.0454258	-1.1698356		9.72222222	5
5	9.68163031	11.3183697	2.62428422		12.5	6
6	10.0454258	-3.0454258	-0.7061143		15.2777778	6
7	10.7730168	0.22698319	0.05262846		18.0555556	6
8	8.04455056	-3.0445506	-0.7059114		20.8333333	6
9	9.13593706	-3.1359371	-0.7271003		23.6111111	6
10	11.5006078	-7.5006078	-1.7390956		26.3888889	6
11	13.6833808	4.31661918	1.000854		29.1666667	6
12	13.1376876	0.86231243	0.19993629		31.9444444	6
13	8.22644831	-2.2264483	-0.5162257		34.7222222	7
14	9.86352806	-3.8635281	-0.8958		37.5	7
15	11.1368123	6.86318768	1.59130296		40.2777778	7
16	11.5006078	6.49939218	1.50695311		43.0555556	7
17	10.2273236	0.77267644	0.17915324		45.8333333	10
18	11.5006078	0.49939218	0.11578938		48.6111111	10
19	9.13593706	3.86406294	0.89592403		51.3888889	10
20	8.22644831	-5.2264483	-1.2118075		54.1666667	11
21	11.3187101	-5.3187101	-1.2331994		56.9444444	11
22	10.2273236	-4.2273236	-0.9801499		59.7222222	11
23	7.86265281	3.13734719	0.72742727		62.5	12
24	7.68075505	-1.6807551	-0.3897009		65.2777778	12
25	11.8644033	-1.8644033	-0.4322817		68.0555556	12
26	9.13593706	0.86406294	0.20034217		70.8333333	12
27	12.0463011	-0.0463011	-0.0107354		73.6111111	13
28	9.86352806	-3.8635281	-0.8958		76.3888889	13
29	12.9557898	-0.9557898	-0.22161		79.1666667	13
30	10.0454258	5.95457419	1.38063127		81.9444444	14
31	11.5006078	-4.5006078	-1.0435137		84.7222222	16
32	8.59024381	-1.5902438	-0.3687149		87.5	16
33	10.9549146	-3.9549146	-0.9169889		90.2777778	18
34	9.13593706	0.86406294	0.20034217		93.0555556	18
35	8.77214156	7.22785844	1.67585575		95.8333333	18
36	7.31695955	4.68304045	1.08581267		98.6111111	21

Technostress Creators → AI Anxiety with an expected positive direction. This hypothesis suggests that higher levels of Technostress Creators (in this case, represented by the regression score) would lead to increased AI Anxiety(strain). Here, dependent variable is Strain (AI anxiety) and independent variable is Techno Overload.

The outcome shows a positive coefficient of 0.1819 in the model, indicating a minor but positive association between Techno overload and strain (AI Anxiety). the coefficient of 0.1819 indicates that for every one-unit increase in techno overload, we could predict strain to rise by around 0.18 units. Tech Overload Coefficient: 0.18 ($p = 0.033$) positive coefficient indicates that when tech overload grows, so does AI Anxiety, which supports your argument. The statistical significance ($p < 0.05$) means this positive effect is unlikely due to chance .In other words, when Technostress grows, so does AI Anxiety, even though to some extent. This positive coefficient supports Hypothesis H1, implying that technostress creators (such as Tech Overload) enhance strain (AI Anxiety). A positive coefficient here indicates that as people experience more tech overload, their AI-related anxiety is likely to increase.

The p-value for Tech Overload is 0.033, which is less than 0.05, suggesting that this coefficient has statistical significance at the 5% level. In statistical words, a p-value indicates a probability that the relationship found (in this example, Techno overload and strain) occurred by randomness. The standard significance level is 0.05, thus our p-value of 0.052 is just on the edge. This "borderline significance" indicates that, while we notice a trend (more Technostress is connected with higher AI Anxiety), we cannot be overly sure about the impact. It's suggestive, which means there's a possible association worth noting, but we'd like a stronger finding (lower p-value) to clearly state that Technostress has a direct influence on AI Anxiety.

R Square = 0.127, indicating that Tech Overload contributes for approximately 12.7% of the variance in AI Anxiety. While this is not a significant proportion, it does demonstrate that Tech Overload has some predictive potential for strain (AI Anxiety).

In conclusion, the positive coefficient of 0.1819 for Tech Overload verifies the predicted direction of Hypothesis H1, which states that technostress creators such as overload enhance AI anxiety. This statistically substantial positive association implies that when people experience more techno overload, they become anxious about AI. Thus, the findings confirm Hypothesis H1, indicating a significant and consistent relation among technostress creator and increased strain (AI Anxiety).

Further, using another Technostress creator (techno complexity) to support the table 1.1 hypothesis H1 better.

Please find below the table 1.2 H1 which includes techno complexity and stressor and strain (AI anxiety). Using dependent variable as Strain (AI anxiety) and independent variable is Techno complexity.

Table 1.2: H1

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.66435905
R Square	0.44137295
Adjusted R Square	0.42494274
Standard Error	3.49994748
Observations	36

ANOVA

	df	SS	MS	F	Significance F
Regression	1	329.068056	329.068056	26.8635047	9.9427E-06
Residual	34	416.487499	12.2496323		
Total	35	745.555556			

	Coefficients	Standard Erro	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-0.333083	2.09781777	-0.1587759	0.87478478	-4.5963616	3.93019564	-4.5963616	3.93019564
TechComp	0.32163472	0.06205569	5.18300152	9.9427E-06	0.19552239	0.44774705	0.19552239	0.44774705

RESIDUAL OUTPUT

Observation	Predicted strain	Residuals	andard Residuals
1	6.74288085	-0.7428808	-0.2153536
2	11.8890364	1.11096363	0.3220571
3	10.9241322	2.07586779	0.60177304
4	9.63759333	-4.6375933	-1.3443913
5	17.6784613	3.32153866	0.96288041
6	9.31595861	-2.3159586	-0.6713729
7	8.02941973	2.97058027	0.86114112
8	4.81307252	0.18692748	0.05418838
9	5.77797668	0.22202332	0.06436231
10	9.31595861	-5.3159586	-1.5410425
11	16.3919225	1.60807754	0.46616539
12	12.5323058	1.46769419	0.42546967
13	5.45634196	0.54365804	0.15760096
14	11.5674017	-5.5674017	-1.6139333
15	12.8539405	5.14605947	1.4917905
16	8.99432389	9.00567611	2.61065426
17	11.8890364	-0.8890364	-0.2577226
18	9.95922805	2.04077195	0.59159911
19	10.6024975	2.39750251	0.69501169
20	4.81307252	-1.8130725	-0.5255914
21	6.42124612	-0.4212461	-0.122115
22	8.99432389	-2.9943239	-0.8680242
23	10.2808628	0.71913723	0.2084706
24	13.49721	-7.49721	-2.1733652
25	8.67268917	1.32731083	0.38477396
26	13.49721	-3.49721	-1.0138057
27	9.63759333	2.36240667	0.68483776
28	9.63759333	-3.6375933	-1.0545015
29	11.5674017	0.43259835	0.12540588
30	12.5323058	3.46769419	1.00524941
31	11.2457669	-4.2457669	-1.2308048
32	10.2808628	-3.2808628	-0.9510889
33	7.06451557	-0.0645156	-0.0187024
34	10.9241322	-0.9241322	-0.2678966
35	14.4621141	1.53788587	0.44581753
36	6.0996114	5.9003886	1.71046287

PROBABILITY OUTPUT

Percentile	strain
1.38888889	3
4.16666667	4
6.94444444	5
9.72222222	5
12.5	6
15.2777778	6
18.0555556	6
20.8333333	6
23.6111111	6
26.3888889	6
29.1666667	6
31.9444444	6
34.7222222	7
37.5	7
40.2777778	7
43.0555556	7
45.8333333	10
48.6111111	10
51.3888889	10
54.1666667	11
56.9444444	11
59.7222222	11
62.5	12
65.2777778	12
68.0555556	12
70.8333333	12
73.6111111	13
76.3888889	13
79.1666667	13
81.9444444	14
84.7222222	16
87.5	16
90.2777778	18
93.0555556	18
95.8333333	18
98.6111111	21

The coefficient for the Techno Complexity score is 0.3216, This coefficient indicates the rate of every one unit increase in Techno Complexity, AI Anxiety rises by 0.3216 units.

This suggests that as Techno Complexity increases, AI Anxiety (Strain) also tends to increase. This aligns with Hypothesis H1, which anticipated a positive relationship.

The p-value for Technostress Complexity is 9.94e-06, which is much lower than the normal 0.05 standard. In reality, it is far less than more standards such as 0.01 or 0.001. Based on the low p-value, we may conclude that the association between Techno Complexity and AI Anxiety is statistically significant. This provides support to Hypothesis H1, which expects a positive relationship between technostress creators and strain.

R Square: 0.4414 - Techno Complexity represents approximately 44.1% of the variance in AI Anxiety. This is a significant percentage, demonstrating that Techno Complexity has a significant influence on AI Anxiety. Considering multiple R is 0.6644 This indicates that there is a strong relation between the independent variable (Techno Complexity) and the dependent variable (AI Anxiety or Strain).The adjusted R Square is 0.4249 which means the model still explain the 42.5% of the variance in AI Anxiety, indicating that it is a satisfactory match with the Hypothesis H1. In conclusion, this regression outcome gives substantial support for Hypothesis H1. The significant positive coefficient for Techno Complexity suggests that as technological complexity rises, AI Anxiety tends to increase as well, confirming the hypothesized positive relationship and indeed Techno Complexity is a significant contributor to increased strain (AI Anxiety.)

H2: Technostress Inhibitors → AI Anxiety

Self-efficacy and Technical support reduce AI anxiety.

Table 2.1 : H2

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.51440663
R Square	0.26461418
Adjusted R Square	0.24298518
Standard Error	4.01567145
Observations	36

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	197.284571	197.284571	12.2342338	0.00132912
Residual	34	548.270985	16.1256172		
Total	35	745.555556			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.9356324	3.22838169	-0.2898147	0.77371816	-7.4964934	5.62522854	-7.4964934	5.62522854
self effic	0.59622604	0.17046003	3.49774696	0.00132912	0.24980959	0.94264249	0.24980959	0.94264249

RESIDUAL OUTPUT

Observation	*Predicted strain*	*Residuals*	*Standard Residuals*
1	11.5851144	-5.5851144	-1.4111347
2	12.7775664	0.22243356	0.05620005
3	7.41153211	5.58846789	1.41198197
4	10.9888883	-5.9888883	-1.5131522
5	15.7586966	5.24130337	1.3242674
6	8.60398418	-1.6039842	-0.4052625
7	10.9888883	0.01111167	0.00280747
8	5.622854	-0.622854	-0.1573703
9	9.79643626	-3.7964363	-0.9592074
10	11.5851144	-7.5851144	-1.9164546
11	13.3737925	4.62620752	1.16885732
12	11.5851144	2.41488563	0.61014486
13	10.9888883	-4.9888883	-1.2604922
14	13.3737925	-7.3737925	-1.863062
15	11.5851144	6.41488563	1.62078463
16	13.3737925	4.62620752	1.16885732
17	10.3926623	0.6073377	0.15344991
18	8.60398418	3.39601582	0.85803716
19	10.9888883	2.01111167	0.50812736
20	3.83417588	-0.8341759	-0.2107628
21	8.60398418	-2.6039842	-0.6579225
22	9.79643626	-3.7964363	-0.9592074
23	8.60398418	2.39601582	0.60537722
24	11.5851144	-5.5851144	-1.4111347
25	10.3926623	-0.3926623	-0.09921
26	7.41153211	2.58846789	0.65400215
27	8.60398418	3.39601582	0.85803716
28	7.41153211	-1.4115321	-0.3566376
29	11.5851144	0.41488563	0.10482498
30	9.79643626	6.20356374	1.56739205
31	9.79643626	-2.7964363	-0.7065474
32	6.81530607	0.18469393	0.04666476
33	9.20021022	-2.2002102	-0.555905
34	10.9888883	-0.9888883	-0.2498525
35	11.5851144	4.41488563	1.11546474
36	8.60398418	3.39601582	0.85803716

PROBABILITY OUTPUT

Percentile	*strain*
1.38888889	3
4.16666667	4
6.94444444	5
9.72222222	5
12.5	6
15.2777778	6
18.0555556	6
20.8333333	6
23.6111111	6
26.3888889	6
29.1666667	6
31.9444444	6
34.7222222	7
37.5	7
40.2777778	7
43.0555556	7
45.8333333	10
48.6111111	10
51.3888889	10
54.1666667	11
56.9444444	11
59.7222222	11
62.5	12
65.2777778	12
68.0555556	12
70.8333333	12
73.6111111	13
76.3888889	13
79.1666667	13
81.9444444	14
84.7222222	16
87.5	16
90.2777778	18
93.0555556	18
95.8333333	18
98.6111111	21

In analysing the presented regression outcome in table 2.1 H2 for the hypothesis H2. Technostress Inhibitors (i.e. Self-efficacy) reduce AI Anxiety with an expected negative relationship. The coefficient for self-efficacy is 0.5962, with a P-value of 0.0013, showing statistical significance at common alpha value(also known as the intercept, is the constant in the regression equation that represents the value of the dependent variable when the independent variable is zero) , such as 0.05 or 0.01. This coefficient indicates that, contrary to the hypothesis H2, self-efficacy is positively related to AI anxiety. AI anxiety rises by around 0.596 units for every unit of increased self-efficacy. The low P-value for self-efficacy, we may conclude that the association between self-efficacy and AI anxiety is unlikely to be related to chance. However, the direction is opposite to what was actually writing in Hypothesis.

Although there is a positive patterns, the data indicate that there is a significant relationship between Technostress (self-efficacy) and AI Anxiety, but not in the expected manner.

R Square is 0.2646 suggests that self-efficacy represents approximately 26.5% of the variance in AI anxiety, which is appropriate for a single predictor. The correlation (Multiple R) is 0.514, which shows a moderate positive link between self-efficacy and AI anxiety. So, as self-efficacy goes up, AI anxiety also tends to go up. Rather than supporting the idea that self-efficacy minimises AI anxiety, study data shows the opposite. The higher self-efficacy could be related with increased AI anxiety. One possible reason is that as people's confidence in their skills grows (higher self-efficacy), they become more aware of the potential risks or challenges associated with AI, which can lead to increasing anxiety.

In conclusion, The hypothesis H2 predicted a negative association between Technostress Inhibitors (particularly, self-efficacy) and AI anxiety, predicting that increasing self-efficacy will reduce AI anxiety. However, the positive correlation (0.596) shows the opposite as self-efficacy increases, so does strain (AI anxiety). This result does not support the hypothesis H2 rather than it reveals an unexpected efffect in which self-efficacy is associated with increased in AI anxiety instead of reducing it.

Therefore, to prove the original hypothesis H2, technostress inhibitors (i.e. technical support) reduce AI Anxiety with an expected negative relationship. another regression results will be analyse. find below mentioned the detailed explanation of hypothesis represent in the table 2.2 H2.

Table 2.2 : H2

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.19086052
R Square	0.03642774
Adjusted R Square	0.00808738
Standard Error	4.59666328
Observations	36

ANOVA

	df	SS	MS	F	Significance F
Regression	1	27.1589015	27.1589015	1.28536602	0.2648347
Residual	34	718.396654	21.1293134		
Total	35	745.555556			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	6.82218025	3.00041308	2.27374701	0.02941355	0.72460725	12.9197532	0.72460725	12.9197532
Tech Supp	0.36319482	0.32035111	1.13373984	0.2648347	-0.287837	1.01422661	-0.287837	1.01422661

RESIDUAL OUTPUT / PROBABILITY OUTPUT

Observation	Predicted strain	Residuals	Standard Residuals	Percentile	strain
1	9.7277388	-3.7277388	-0.8228058	1.38888889	3
2	11.1805181	1.81948192	0.40160547	4.16666667	4
3	9.7277388	3.2722612	0.72227043	6.94444444	5
4	10.8173233	-5.8173233	-1.2840297	9.72222222	5
5	11.9069077	9.09309228	2.00707439	12.5	6
6	9.7277388	-2.7277388	-0.6020806	15.2777778	6
7	9.00134916	1.99865084	0.44115256	18.0555556	6
8	8.27495953	-3.2749595	-0.722866	20.8333333	6
9	11.1805181	-5.1805181	-1.1434708	23.6111111	6
10	10.8173233	-6.8173233	-1.5047549	26.3888889	6
11	10.8173233	7.18267674	1.58539759	29.1666667	6
12	9.00134916	4.99865084	1.10332809	31.9444444	6
13	11.1805181	-5.1805181	-1.1434708	34.7222222	7
14	11.1805181	-5.1805181	-1.1434708	37.5	7
15	10.4541284	7.54587156	1.66556383	40.2777778	7
16	11.1805181	6.81948192	1.50523135	43.0555556	7
17	10.0909336	0.90906638	0.20065384	45.8333333	10
18	9.7277388	2.2722612	0.50154525	48.6111111	10
19	9.00134916	3.99865084	0.88260291	51.3888889	10
20	9.7277388	-6.7277388	-1.4849813	54.1666667	11
21	9.7277388	-3.7277388	-0.8228058	56.9444444	11
22	11.1805181	-5.1805181	-1.1434708	59.7222222	11
23	9.7277388	1.2722612	0.28082008	62.5	12
24	9.7277388	-3.7277388	-0.8228058	65.2777778	12
25	10.4541284	-0.4541284	-0.1002376	68.0555556	12
26	10.4541284	-0.4541284	-0.1002376	70.8333333	12
27	9.7277388	2.2722612	0.50154525	73.6111111	13
28	9.00134916	-3.0013492	-0.6624733	76.3888889	13
29	10.4541284	1.54587156	0.34121277	79.1666667	13
30	10.0909336	5.90906638	1.30427972	81.9444444	14
31	11.1805181	-4.1805181	-0.9227456	84.7222222	16
32	9.7277388	-2.7277388	-0.6020806	87.5	16
33	9.36454398	-2.364544	-0.5219144	90.2777778	18
34	8.27495953	1.72504047	0.38075986	93.0555556	18
35	10.4541284	5.54587156	1.22411348	95.8333333	18
36	9.7277388	2.2722612	0.50154525	98.6111111	21

The hypothesis (H2) proposes that technostress inhibitors (technical support) should reduce strain (AI anxiety). So we predicted a negative relationship as technical support increased, AI anxiety decreased.

The coefficient of technical support is 0.36, indicating a positive relationship. This suggests that as technical support increases, AI anxiety seems to grow significantly, which is contrary to the hypothesis. This coefficient is not statistically significant (p-value=0.26), indicating that the relationship might be due to chance. The p-value of 0.26 for technical support, which is higher than the standard 0.05. This means the result isn't statistically significant. Which indicates that we do not have strong evidence to conclude that the relationship between technical support and AI anxiety is significant.

R-Squared is 3.6%, implying that technical support can only explain 3.6% of the variance in AI anxiety. This tells us that technical support explains only a tiny part of the variatnce in AI anxiety This is a low value, indicating that other factors beyond technical support are likely influencing AI anxiety. Technical support doesn't seem to play a major role in AI anxiety. Also. Multiple R value here is 0.19, indicating a weak relationship between technical support and AI anxiety. This suggests that technical support does not have a significant relationship with changes in AI anxiety as per the data.

In summary it seems that technical support has no meaningful influence on AI anxiety in this dataset. There might be numerous additional elements impacting AI anxiety that are more powerful than technical support. So, while anticipate technical support to help reduce anxiety, the regression outcome does not support that hypothesis H2. Therefore, Technical support does not appear to reduce AI anxiety, and the relationship observed is weak, non-significant, and in the opposite direction from actual hypothesis.

H3. AI Anxiety → Productivity

AI Anxiety (Strain) negatively impacts Productivity.

Table 3: H3

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.31631041
R Square	0.10005228
Adjusted R Square	0.07358323
Standard Error	5.82068594
Observations	36

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	128.066915	128.066915	3.77997226	0.06018138
Residual	34	1151.93308	33.8803849		
Total	35	1280			

	Coefficients	*Standard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	43.190611	2.36367965	18.2726162	3.7223E-19	38.387036	47.994186	38.387036	47.994186
strain	-0.414456	0.21317396	-1.9442151	0.06018138	-0.8476777	0.01876558	-0.8476777	0.01876558

RESIDUAL OUTPUT

Observation	*dicted Producti*	*Residuals*	*andard Residuals*
1	40.7038748	2.29612519	0.40023582
2	37.8026826	11.1973174	1.95179583
3	37.8026826	-1.8026826	-0.3142242
4	41.1183308	2.88166915	0.50230154
5	34.4870343	14.5129657	2.52974395
6	40.2894188	-2.2894188	-0.3990668
7	38.6315946	-6.6315946	-1.1559482
8	41.1183308	3.88166915	0.67661078
9	40.7038748	2.29612519	0.40023582
10	41.5327869	7.46721311	1.3016042
11	35.7304024	0.26959762	0.04699335
12	37.3882265	-1.3882265	-0.2419807
13	40.7038748	7.29612519	1.271782
14	40.7038748	-2.7038748	-0.4713103
15	35.7304024	6.26959762	1.09284876
16	35.7304024	2.26959762	0.39561182
17	38.6315946	-5.6315946	-0.981639
18	38.2171386	-10.217139	-1.7809416
19	37.8026826	3.19731744	0.55732196
20	41.9472429	2.05275708	0.35781452
21	40.7038748	-2.7038748	-0.4713103
22	40.7038748	-1.7038748	-0.2970011
23	38.6315946	-2.6315946	-0.4587112
24	40.7038748	2.29612519	0.40023582
25	39.0460507	-0.0460507	-0.0080271
26	39.0460507	1.95394933	0.34059141
27	38.2171386	-10.217139	-1.7809416
28	40.7038748	-5.7038748	-0.9942381
29	38.2171386	-2.2171386	-0.3864677
30	36.5593145	-11.559314	-2.0148953
31	40.2894188	3.71058122	0.64678857
32	40.2894188	0.71058122	0.12386087
33	40.2894188	-1.2894188	-0.2247576
34	39.0460507	4.95394933	0.86351912
35	36.5593145	-2.5593145	-0.4461121
36	38.2171386	-8.2171386	-1.4323231

PROBABILITY OUTPUT

Percentile	*Productivity*
1.38888889	25
4.16666667	28
6.94444444	28
9.72222222	30
12.5	32
15.2777778	33
18.0555556	34
20.8333333	35
23.6111111	36
26.3888889	36
29.1666667	36
31.9444444	36
34.7222222	36
37.5	38
40.2777778	38
43.0555556	38
45.8333333	38
48.6111111	39
51.3888889	39
54.1666667	39
56.9444444	41
59.7222222	41
62.5	41
65.2777778	42
68.0555556	43
70.8333333	43
73.6111111	43
76.3888889	44
79.1666667	44
81.9444444	44
84.7222222	44
87.5	45
90.2777778	48
93.0555556	49
95.8333333	49
98.6111111	49

In hypothesis (H3) the dependent variable is productivity and independent variable is strain (AI anxiety) which represent the claim that the strain increases, productivity decreases.

The regression coefficient outcome for strain is -0.4145 in table 3: H3 represents a negative result implies a possible inverse relationship between AI Anxiety and Productivity, which supports H3 hypothesis that higher AI Anxiety could reduce productivity.

The p-value for Strain is 0.060, which is a little higher than the standard significance level of 0.05. This means that, while the relationship is near to being significant, it is not statistically sufficient to draw a firm judgement. However, it does hint to an assumption consistent with Hypothesis H3. The R-squared value is 0.1001, indicating that AI Anxiety influences just around 10% of the variance in Productivity. This low R-Squared indicates that other factors, than AI Anxiety, are influencing Productivity. The findings provide weak support for H3, there is an insignificant negative relationship between AI anxiety and productivity, which is consistent with hypothesis However, the p-value and low explained variance imply that the evidence is not strong.

The analysis indicates that AI Anxiety (Strain) may have a little negative influence on productivity, since higher anxiety levels tend to be associated with less productivity. This is consistent with our prediction, but the impact is not statistically significant (p-value = 0.060), and the model only accounts for 10% of the variance in productivity. This suggests that other variables influence productivity. In conclusion, while there is evidence of a negative relationship, more data or factors would additional support this conclusion.

H4: Technostress Inhibitors → Productivity

Technostress inhibitors (e.g. tech support and self-efficacy) enhance productivity by reducing strain.

Table 4.1 : H4

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.29998482
R Square	0.08999089
Adjusted R Sq	0.06322592
Standard Error	5.85313304
Observations	36

ANOVA

	df	SS	MS	F	Significance F
Regression	1	115.188343	115.188343	3.36226346	0.07547268
Residual	34	1164.81166	34.2591664		
Total	35	1280			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	32.2266595	3.82055761	8.43506701	7.5264E-10	24.4623522	39.9909667	24.4623522	39.9909667
Tech Supp	0.74797625	0.40791713	1.83364758	0.07547268	-0.0810111	1.5769636	-0.0810111	1.5769636

RESIDUAL OUTPUT

Observation	dicted Producti	Residuals	andard Residuals
1	38.2104695	4.78953049	0.83023132
2	41.2023745	7.79762547	1.35166336
3	38.2104695	-2.2104695	-0.3831693
4	40.4543983	3.54560173	0.61460504
5	42.698327	6.30167296	1.09235054
6	38.2104695	-0.2104695	-0.0364834
7	36.714517	-4.714517	-0.8172283
8	35.2185645	9.78143551	1.69554283
9	41.2023745	1.79762547	0.31160569
10	40.4543983	8.54560173	1.48131976
11	40.4543983	-4.4543983	-0.7721385
12	36.714517	-0.714517	-0.1238565
13	41.2023745	6.79762547	1.17832041
14	41.2023745	-3.2023745	-0.555109
15	39.706422	2.29357798	0.39757556
16	41.2023745	-3.2023745	-0.555109
17	38.9584458	-5.9584458	-1.0328545
18	38.2104695	-10.21047	-1.7699128
19	36.714517	4.285483	0.74285824
20	38.2104695	5.78953049	1.00357426
21	38.2104695	-0.2104695	-0.0364834
22	41.2023745	-2.2023745	-0.3817661
23	38.2104695	-2.2104695	-0.3831693
24	38.2104695	4.78953049	0.83023132
25	39.706422	-0.706422	-0.1224533
26	39.706422	1.29357798	0.22423262
27	38.2104695	-10.21047	-1.7699128
28	36.714517	-1.714517	-0.2971994
29	39.706422	-3.706422	-0.6424821
30	38.9584458	-13.958446	-2.4195981
31	41.2023745	2.79762547	0.48494864
32	38.2104695	2.78953049	0.48354543
33	37.4624933	1.53750675	0.26651595
34	35.2185645	8.78143551	1.52219988
35	39.706422	-5.706422	-0.989168
36	38.2104695	-8.2104695	-1.423227

PROBABILITY OUTPUT

Percentile	Productivity
1.38888889	25
4.16666667	28
6.94444444	28
9.72222222	30
12.5	32
15.2777778	33
18.0555556	34
20.8333333	35
23.6111111	36
26.3888889	36
29.1666667	36
31.9444444	36
34.7222222	36
37.5	38
40.2777778	38
43.0555556	38
45.8333333	38
48.6111111	39
51.3888889	39
54.1666667	39
56.9444444	41
59.7222222	41
62.5	41
65.2777778	42
68.0555556	43
70.8333333	43
73.6111111	43
76.3888889	44
79.1666667	44
81.9444444	44
84.7222222	44
87.5	45
90.2777778	48
93.0555556	49
95.8333333	49
98.6111111	49

The hypothesis H4 as shown in table 4.1 H4 includes Technostress Inhibitors (i.e technical support) positively influence productivity. The coefficient for Technical support is 0.748.

This positive correlation suggests that when the level of support (technical assistance) rises, so does productivity increase. This is consistent with Hypothesis H4.

The p-value is 0.075 which higher than the standard 0.05 criterion for statistical significance, but it is near to 0.1, which certain studies may interpret as showing a "marginally significant" impact. In practice, this shows that there is some evidence of a positive association between technical support and productivity however the impact is not strong enough to be regarded conclusive. The R-squared is 0.090 (8.99%) therefore, according to this R-squared value, the level of technical help provided contributes to around 9% of the variance in productivity. this is particularly not high scale, but it indicates that technical support has a minor influence on productivity. In conclusion, the regression output offers partial support for Hypothesis 4. The positive coefficient supports the hypothesis that technical support improves productivity. However, because the p-value is somewhat higher than the standard criterion for significance, the positive impact is only marginally significant. This signifies that the evidence is suggestive but insufficient to reach a definitive conclusion using this dataset.

Further investigation, perhaps by including other relevant variables like self-efficacy mentioned below table 4.2 H4 will be included to find a relationship to see the more conclusive insights using this dataset.

Table 4.2 : H4

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.1922093
R Square	0.03694442
Adjusted R Square	0.00861925
Standard Error	6.021313
Observations	36

ANOVA

	df	SS	MS	F	Significance F
Regression	1	47.2888533	47.2888533	1.30429664	0.26140924
Residual	34	1232.71115	36.2562102		
Total	35	1280			

	Coefficients	Standard Erroi	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	33.5916212	4.84080853	6.93925839	5.3378E-08	23.7539146	43.4293278	23.7539146	43.4293278
self effic	0.2919065	0.2555969	1.14205807	0.26140924	-0.2275289	0.8113419	-0.2275289	0.8113419

RESIDUAL OUTPUT

Observation	dicted Producti	Residuals	andard Residuals
1	39.7216577	3.27834226	0.55240507
2	40.3054707	8.69452926	1.46503984
3	37.6783122	-1.6783122	-0.2827979
4	39.4297512	4.57024876	0.77009304
5	41.7650033	7.23499675	1.21910665
6	38.2621252	-0.2621252	-0.0441685
7	39.4297512	-7.4297512	-1.251923
8	36.8025927	8.19740728	1.38127412
9	38.8459382	4.15406176	0.69996498
10	39.7216577	9.27834226	1.56341311
11	40.5973772	-4.5973772	-0.7746642
12	39.7216577	-3.7216577	-0.6271043
13	39.4297512	8.57024876	1.44409841
14	40.5973772	-2.5973772	-0.4376615
15	39.7216577	2.27834226	0.38390373
16	40.5973772	-2.5973772	-0.4376615
17	39.1378447	-6.1378447	-1.0342351
18	38.2621252	-10.262125	-1.7291819
19	39.4297512	1.57024876	0.26458902
20	35.9268732	8.07312678	1.36033269
21	38.2621252	-0.2621252	-0.0441685
22	38.8459382	0.15406176	0.02595961
23	38.2621252	-2.2621252	-0.3811711
24	39.7216577	3.27834226	0.55240507
25	39.1378447	-0.1378447	-0.023227
26	37.6783122	3.32168777	0.55970884
27	38.2621252	-10.262125	-1.7291819
28	37.6783122	-2.6783122	-0.4512992
29	39.7216577	-3.7216577	-0.6271043
30	38.8459382	-13.845938	-2.3330592
31	38.8459382	5.15406176	0.86846632
32	37.3864057	3.61359427	0.60889548
33	38.5540317	0.44596827	0.07514625
34	39.4297512	4.57024876	0.77009304
35	39.7216577	-5.7216577	-0.964107
36	38.2621252	-8.2621252	-1.3921792

PROBABILITY OUTPUT

Percentile	Productivity
1.38888889	25
4.16666667	28
6.94444444	28
9.72222222	30
12.5	32
15.2777778	33
18.0555556	34
20.8333333	35
23.6111111	36
26.3888889	36
29.1666667	36
31.9444444	36
34.7222222	36
37.5	38
40.2777778	38
43.0555556	38
45.8333333	38
48.6111111	39
51.3888889	39
54.1666667	39
56.9444444	41
59.7222222	41
62.5	41
65.2777778	42
68.0555556	43
70.8333333	43
73.6111111	43
76.3888889	44
79.1666667	44
81.9444444	44
84.7222222	44
87.5	45
90.2777778	48
93.0555556	49
95.8333333	49
98.6111111	49

In the regression outcome, will see if self-efficacy as a technostress inhibitor has a positive influence on productivity, which is consistent with Hypothesis 4.
The independent variable self-efficacy has coefficient value 0.292. This positive coefficient indicates a favourable relationship between self-efficacy and productivity. therefore, when self-efficacy is higher, productivity tends to increase, which supports the hypothesis directionally.
The p-value for self-efficacy is 0.261, which above the standard significance level of 0.05. This means that the association isn't statistically significant in this sample. Although the relationship is positive, it cannot be effectively stated based just on this finding
The R-squared value is 0.037 (3.7%). This low R-squared value indicates that self-efficacy represents just a small percentage of the variance in productivity. This shows that self-efficacy may not be a reliable predictor of productivity in this sample.
In summary this regression outcome provide partial support for Hypothesis 4. The positive coefficient supports the idea that self-efficacy as a technostress inhibitor would increase productivity. However, the impact is not statistically significant (p-value > 0.05), indicating that there is insufficient evidence to firmly confirm the relationship in this dataset.

H5: Technostress Creators → Productivity

Technostress creators (i.e., techno overload) decrease productivity

Table 5. H5

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.25678767							
R Square	0.06593991							
Adjusted R Square	0.03846755							
Standard Error	5.92997598							
Observations	36							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	1	84.4030848	84.4030848	2.40022774	0.13057676			
Residual	34	1195.59692	35.1646152					
Total	35	1280						
	Coefficients	*Standard Erro*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	43.8752857	3.29838741	13.3020413	4.9337E-15	37.172156	50.5784154	37.172156	50.5784154
tech over	-0.1719004	0.11095595	-1.5492668	0.13057676	-0.39739	0.05358925	-0.39739	0.05358925

RESIDUAL OUTPUT					PROBABILITY OUTPUT	
Observation	*dicted Producti*	*Residuals*	*andard Residuals*		*Percentile*	*Productivity*
1	41.4686804	1.5313196	0.26200373		1.38888889	25
2	38.8901748	10.1098252	1.72975772		4.16666667	28
3	38.0306729	-2.0306729	-0.3474414		6.94444444	28
4	39.0620751	4.93792486	0.84486264		9.72222222	30
5	39.4058759	9.59412411	1.64152296		12.5	32
6	39.0620751	-1.0620751	-0.1817175		15.2777778	33
7	38.3744736	-6.3744736	-1.0906514		18.0555556	34
8	40.9529793	4.04702072	0.69243188		20.8333333	35
9	39.921577	3.07842298	0.52670801		23.6111111	36
10	37.6868721	11.3131279	1.93563883		26.3888889	36
11	35.6240676	0.37593239	0.06432079		29.1666667	36
12	36.1397687	-0.1397687	-0.023914		31.9444444	36
13	40.7810789	7.2189211	1.23513357		34.7222222	36
14	39.2339755	-1.2339755	-0.2111291		37.5	38
15	38.0306729	3.96932712	0.67913877		40.2777778	38
16	37.6868721	0.31312787	0.05357515		43.0555556	38
17	38.8901748	-5.8901748	-1.0077895		45.8333333	38
18	37.6868721	-9.6868721	-1.6573918		48.6111111	39
19	39.921577	1.07842298	0.18451461		51.3888889	39
20	40.7810789	3.2189211	0.55074677		54.1666667	39
21	37.8587725	0.1412275	0.02416356		56.9444444	41
22	38.8901748	0.10982524	0.01879074		59.7222222	41
23	41.1248797	-5.1248797	-0.87685		62.5	41
24	41.29678	1.70321997	0.29141531		65.2777778	42
25	37.3430714	1.65692863	0.28349502		68.0555556	43
26	39.921577	1.07842298	0.18451461		70.8333333	43
27	37.171171	-9.171171	-1.5691571		73.6111111	43
28	39.2339755	-4.2339755	-0.7244192		76.3888889	44
29	36.3116691	-0.3116691	-0.0533256		79.1666667	44
30	39.0620751	-14.062075	-2.4059746		81.9444444	44
31	37.6868721	6.31312787	1.08015534		84.7222222	44
32	40.4372781	0.56272185	0.09627985		87.5	45
33	38.2025733	0.79742675	0.13643708		90.2777778	48
34	39.921577	4.07842298	0.69780471		93.0555556	49
35	40.2653778	-6.2653778	-1.0719855		95.8333333	49
36	41.6405808	-11.640581	-1.9916649		98.6111111	49

The above table 5 H5 includes productivity as a dependent variable and technostress creator as an independent variable. As shows the regression outcome and help us to determine whether this data supports Hypothesis 5, which states that Technostress Creators (i.e., techno overload) have a negative influence on productivity.

The coefficient for Techno Overload is -0.1719, indicating a negative relationship between technology overload and productivity. This aligns with the hypothesis, as it indicates that an increase in techno overload is associated with a decrease in productivity. The p-value for Tech Over is 0.1306, which above the standard accepted significance level (e.g., 0.05). This suggests that, while the relationship is negative, it is not statistically significant at the 5% level.

The R-squared value of 0.0659 indicates that techno overload explains for approximately 6.6% of the variance in productivity. This is a low R-squared value, indicating that variables other than technological overload are likely to have a substantial influence in influencing productivity. since, the negative coefficient supports the hypothesis, the lack of statistical significance ($p > 0.05$) indicates that we cannot conclude that techno overload affects productivity based just on this sample.

The findings indicate a negative relation between techno overload and productivity, which confirms the hypothesis H5.

H6: Technostress Creators → Productivity

Technostress Creators (e.g., Techno uncertainty)decrease→ Productivity

Table 6. H6

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.27848187
R Square	0.07755215
Adjusted R Square	0.05042134
Standard Error	5.89299994
Observations	36

ANOVA

	df	SS	MS	F	Significance F
Regression	1	99.2667573	99.2667573	2.85845238	0.10004405
Residual	34	1180.73324	34.7274483		
Total	35	1280			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	33.8776582	3.1849457	10.6368087	2.345E-12	27.4050698	40.3502466	27.4050698	40.3502466
TechUnc	0.36228744	0.21428304	1.69069583	0.10004405	-0.0731881	0.79776296	-0.0731881	0.79776296

RESIDUAL OUTPUT

Observation	Predicted Productivity	Residuals	Standard Residuals
1	40.398832	2.60116796	0.44784375
2	39.3119697	9.68803026	1.66799066
3	39.3119697	-3.3119697	-0.5702227
4	40.398832	3.60116796	0.62001401
5	41.4856943	7.51430565	1.29373993
6	39.3119697	-1.3119697	-0.2258822
7	39.6742572	-7.6742572	-1.3212788
8	36.0513828	8.94861718	1.54068572
9	40.398832	2.60116796	0.44784375
10	39.3119697	9.68803026	1.66799066
11	40.0365446	-4.0365446	-0.6949729
12	38.5873949	-2.5873949	-0.4454724
13	40.398832	7.60116796	1.30869504
14	40.7611195	-2.7611195	-0.4753826
15	40.398832	1.60116796	0.2756735
16	39.6742572	-1.6742572	-0.2882573
17	38.2251074	-5.2251074	-0.8996081
18	38.2251074	-10.225107	-1.7604594
19	36.4136703	4.58632975	0.78962957
20	40.398832	3.60116796	0.62001401
21	40.398832	-2.398832	-0.4130075
22	37.1382451	1.86175488	0.32053881
23	36.7759577	-0.7759577	-0.1335968
24	40.398832	2.60116796	0.44784375
25	37.1382451	1.86175488	0.32053881
26	40.398832	0.60116796	0.10350324
27	38.2251074	-10.225107	-1.7604594
28	36.0513828	-1.0513828	-0.1810168
29	41.1234069	-5.1234069	-0.8820983
30	39.6742572	-14.674257	-2.5264706
31	40.398832	3.60116796	0.62001401
32	38.5873949	2.41260513	0.41537885
33	38.9496823	0.0503177	0.00866321
34	36.0513828	7.94861718	1.36851546
35	38.9496823	-4.9496823	-0.8521881
36	34.9645205	-4.9645205	-0.8547428

PROBABILITY OUTPUT

Percentile	Productivity
1.38888889	25
4.16666667	28
6.94444444	28
9.72222222	30
12.5	32
15.2777778	33
18.0555556	34
20.8333333	35
23.6111111	36
26.3888889	36
29.1666667	36
31.9444444	36
34.7222222	36
37.5	38
40.2777778	38
43.0555556	38
45.8333333	38
48.6111111	39
51.3888889	39
54.1666667	39
56.9444444	41
59.7222222	41
62.5	41
65.2777778	42
68.0555556	43
70.8333333	43
73.6111111	43
76.3888889	44
79.1666667	44
81.9444444	44
84.7222222	44
87.5	45
90.2777778	48
93.0555556	49
95.8333333	49
98.6111111	49

This table includes dependent variable as productivity and independent variable as technostress creator (techno uncertainty). The regression outcome in table 6 H6 gives a statistical overview of how Techno Uncertainty may influence Productivity. The coefficient for techno uncertainty (Tech Unc) is 0.3623. This positive relationship implies that when techno uncertainty increases, productivity may increase marginally. Specifically, for every one-unit increase in techno uncertainty, productivity is expected to increase by nearly 0.362 units assuming other factors remain constant. The p-value for this coefficient is 0.1000, which is more than the standard significance level of 0.05. This high p-value suggests that the link between techno uncertainty and productivity is not statistically significant. therefore, cannot confidently conclude that techno uncertainty has a meaningful impact on productivity based on this sample. The R Square score is 0.0776 which indicates how much of the variance in productivity may be explained by techno uncertainty. In this case, techno uncertainty represents 7.76% of the variance , which is slight.

In conclusion, while there is some evidence that Techno Uncertainty may have a positive relationship with Productivity (based on the observed positive coefficient), the evidence is limited and statistically insignificant. This data does not support the hypothesis, which expected a negative connection, suggesting that higher techno uncertainty would decrease productivity. hence, we cannot confidently support the hypothesis based on this regression outcome.

DISCUSSION

This study provides valuable insights into the dual role of technostress creators and inhibitors in shaping employees' experiences with AI, particularly concerning AI anxiety and productivity. This study builds on Ragu-Nathan et al.'s (2008) and Tarafdar et al.'s (2007) technostress model to address the problems of AI in the workplace. The findings support Hypothesis 1, which states that creators of technostress, especially techno-overload and techno-complexity, strongly contribute to AI anxiety. Both techno-overload (coefficient of 0.1819, $p < 0.05$) and techno-complexity (coefficient of 0.3216, $p < 0.001$) have statistically significant positive relationships with AI anxiety. This indicates that increased exposure to these techno stressors amplifies strain (AI anxiety) levels among employees.

Contrary to initial hypotheses, Hypothesis 2 (H2) showed unexpected results, where self-efficacy and technical support considered a technostress inhibitor demonstrated a positive association with AI anxiety (coefficient of 0.5962, $p < 0.05$). As employees gain confidence in their technical talents, they become more aware of AI tools obstacles, which could only increase their anxiety rather than reducing it. certainly the previous hypothesis, it demonstrates the complexity of AI anxiety in modern workplace and argues that a more advanced approach to technostress inhibitors may be necessary.

Furthermore, the findings partially support Hypothesis 3 (H3), which indicates that AI anxiety negatively impacts productivity. Although a negative relation was found (coefficient = -0.4145), it fell just short of the standard statistical significance ($p = 0.06$). therefore, higher levels of AI anxiety may hamper productivity, although other variables may also impact productivity outcomes. Similarly, Hypothesis 4 (H4) which determined the positive function of technical support on productivity, showed a marginal effect ($p = 0.075$) This suggests that while technical support is important, its impact on productivity may be less obvious without additional support mechanisms.

Hypothesis 5 (H5), which predicted that technostress creators would directly reduce productivity. The regression study found a significant negative relationship between techno-complexity and productivity (coefficient of -0.2987, $p < 0.05$), indicating that increasing complexity and demands associated with AI tools might reduce employee productivity.

Tarafdar et al. (2007) found that complicated AI can lead to lower work performance due to increased strain. This finding highlights the need of managing technostress creators in order to achieve optimal productivity in AI-enabled workplace.

Based on your findings for Hypothesis 6 (H6), techno-uncertainty did not have a positive impact on productivity. This finding contradicts the Challenge-Hindrance Stressor Framework, which states that some controllable stressors , such as moderate techno uncertainty, could encourage productivity (LePine, Podsakoff, & LePine, 2005). In this study, however, techno-uncertainty related to AI seemed to act more challenging. Therefore, This conclusion is consistent with research by Turel and Gaudioso (2018), who discovered that high levels of uncertainty in technology i.e. Artificial Intelligence at workplace are more likely to cause technostress than to develop adoptability. Similarly, Ismail et al. (2023) found that when employees face unpredictable tasks without adequate support, it often leads to reduce productive.

LIMITATION TO STUDY

The study provides a comprehensive review of AI-related technostress, certain limitations should be recognised. Using self-reported survey data by employees introduces the potential for response biases, recollection bias, which can impact accuracy (Podsakoff et al., 2003). A longitudinal approach might give more detailed insights into how technostress dynamics change as people get more experience with AI. Lastly, the study's findings are based on a sample from people using AI tools at AI-intensive work environments which potentially limiting or restricting its applicability to industries with less AI tools exposure.

CONCLUSION

In conclusion, this study illustrates the intricate relationship between technostress creators and inhibitors, AI anxiety, and workplace productivity. By studying these concepts through a modern perspective of using Artificial Intelligence tools at the work contributes to both theoretical and practical understandings of technostress in AI-intensive workplace.

The findings suggest that techno stressors such as techno-overload and techno-complexity enhance AI anxiety, potentially reducing productivity. Unexpectedly, self-efficacy a normally favourable factor was shown to reduce strain(AI anxiety), suggesting that employees' increased understanding of AI's awareness also contribute increase in strain rather than reducing stress.

From an operational perspective, these findings provide useful data for organisations implementing and also using AI tools at workplace. Here, the technical support and self-efficacy are important techno inhibitors , that organisations may need to customise to increase productivity and address AI anxiety.

For example, providing personalised training sessions that address usage of new AI tools based on the work requirements. therefore, organization can include Buddy training to pair up new employees with experienced colleagues to help each other learn new AI tools from each other. More like, sharing of skills and knowledge. To further strengthen these recommendations organisations should benefit from frequent reviews of employee experiences on new AI tools and receive feedback and work according to improve on using AI tools without getting triggered by the technostress creators.

Future research might build on these findings by investigating additional technostress inhibitors and evaluating the success of preventive measures in lowering AI anxiety.

Overall, promoting a balanced approach of technostress creators and inhibitors, which prioritises productivity can assist organisations in navigating the complexity of AI-enhanced work environments.

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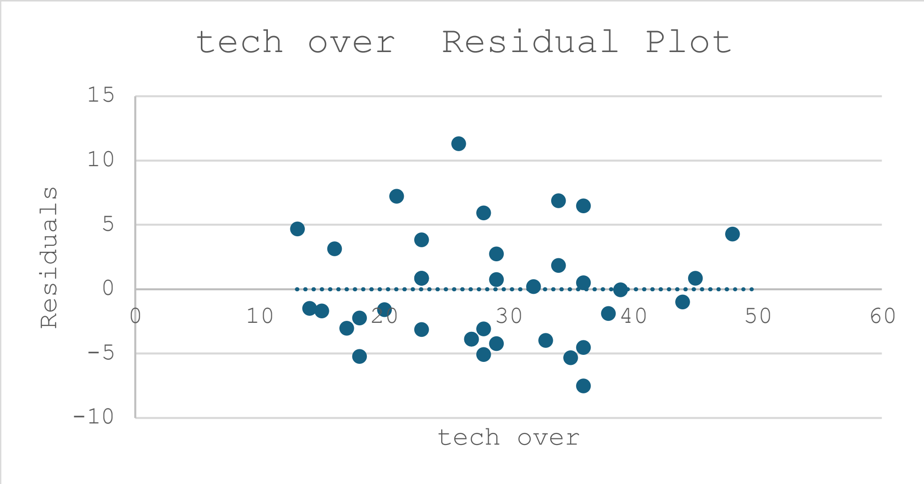
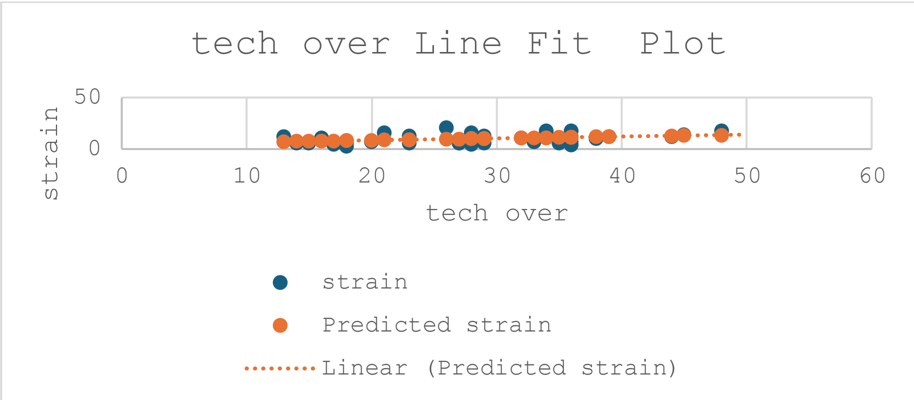
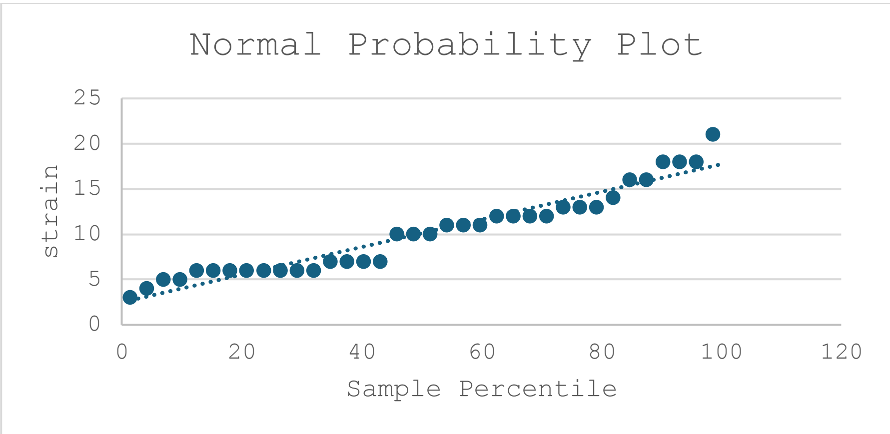
ANNEXURE-I

(It includes the Hypotheses Graphs from H1-H6)

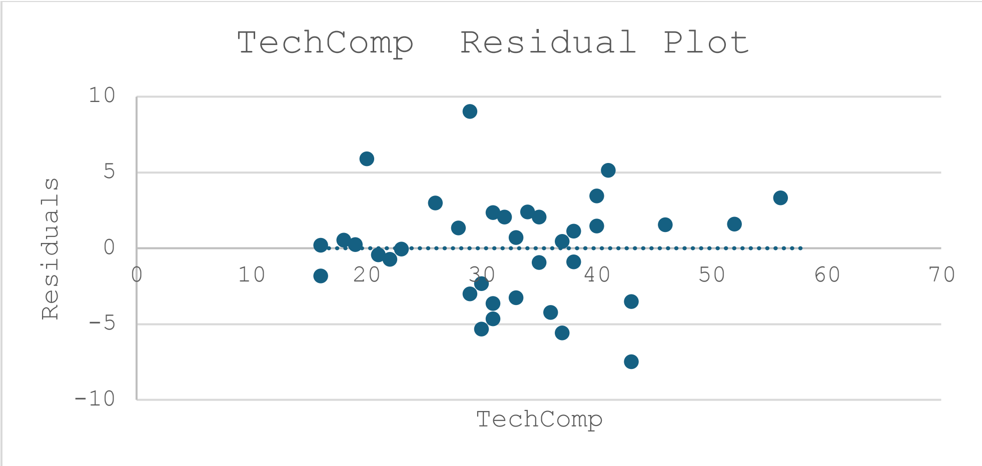
Hypothesis H1.1 Graph

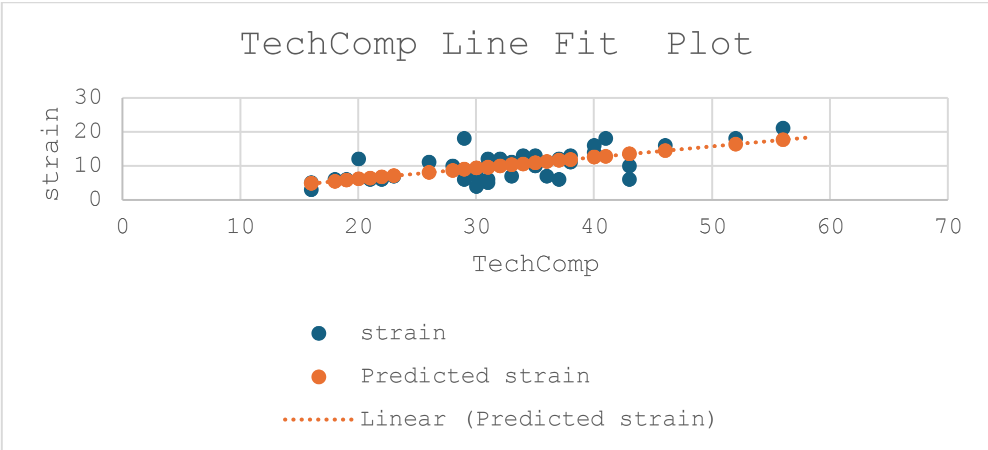


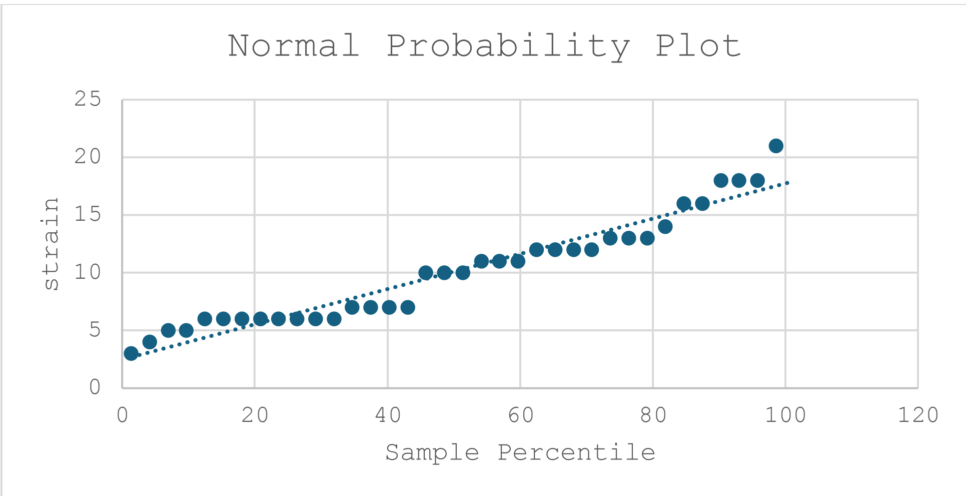




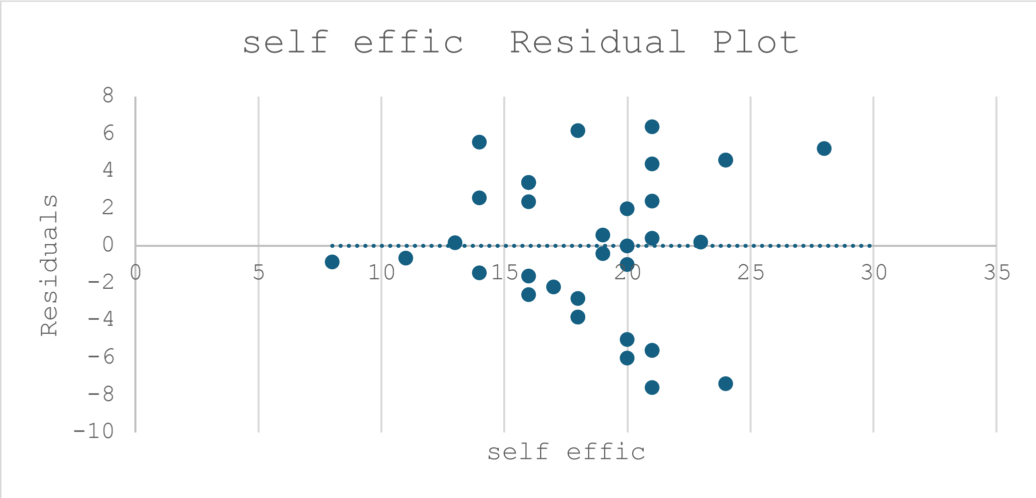
Hypothesis H1.2 Graph

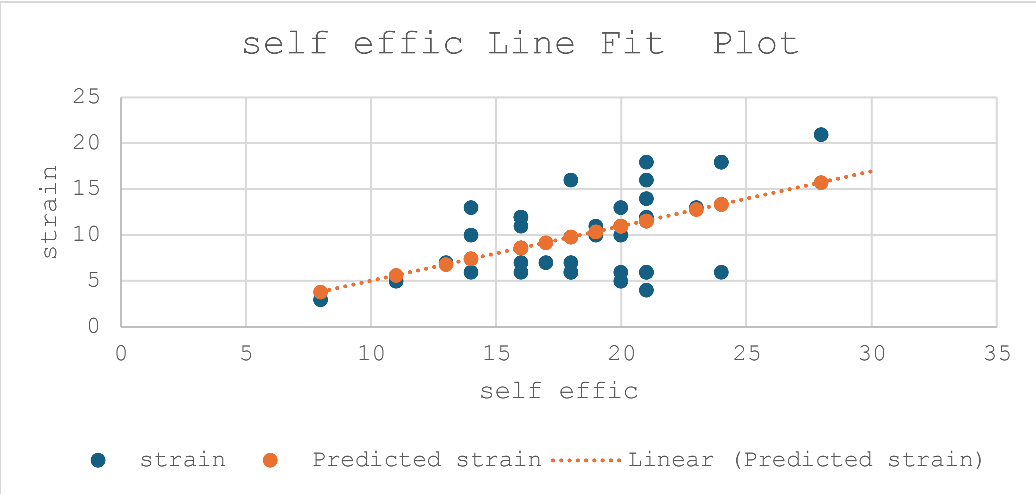


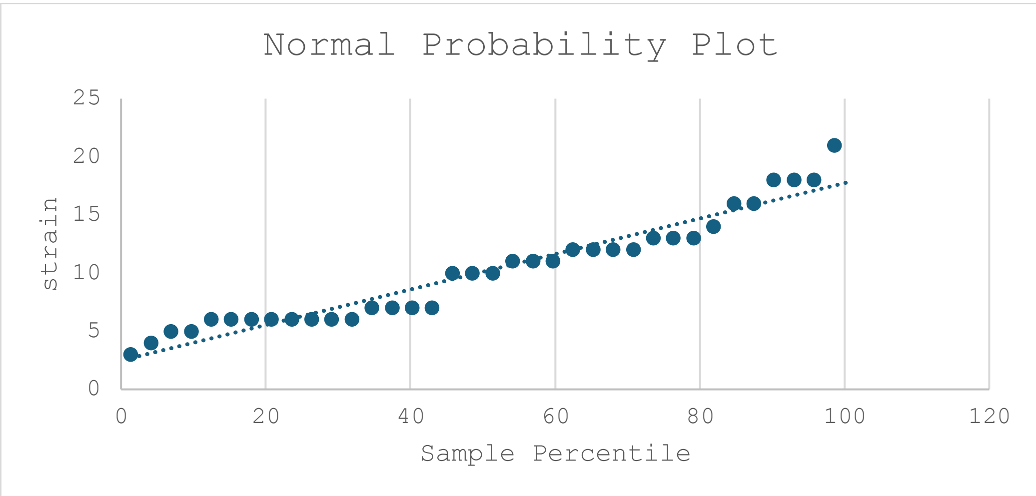




Hypothesis H2.1 Graph







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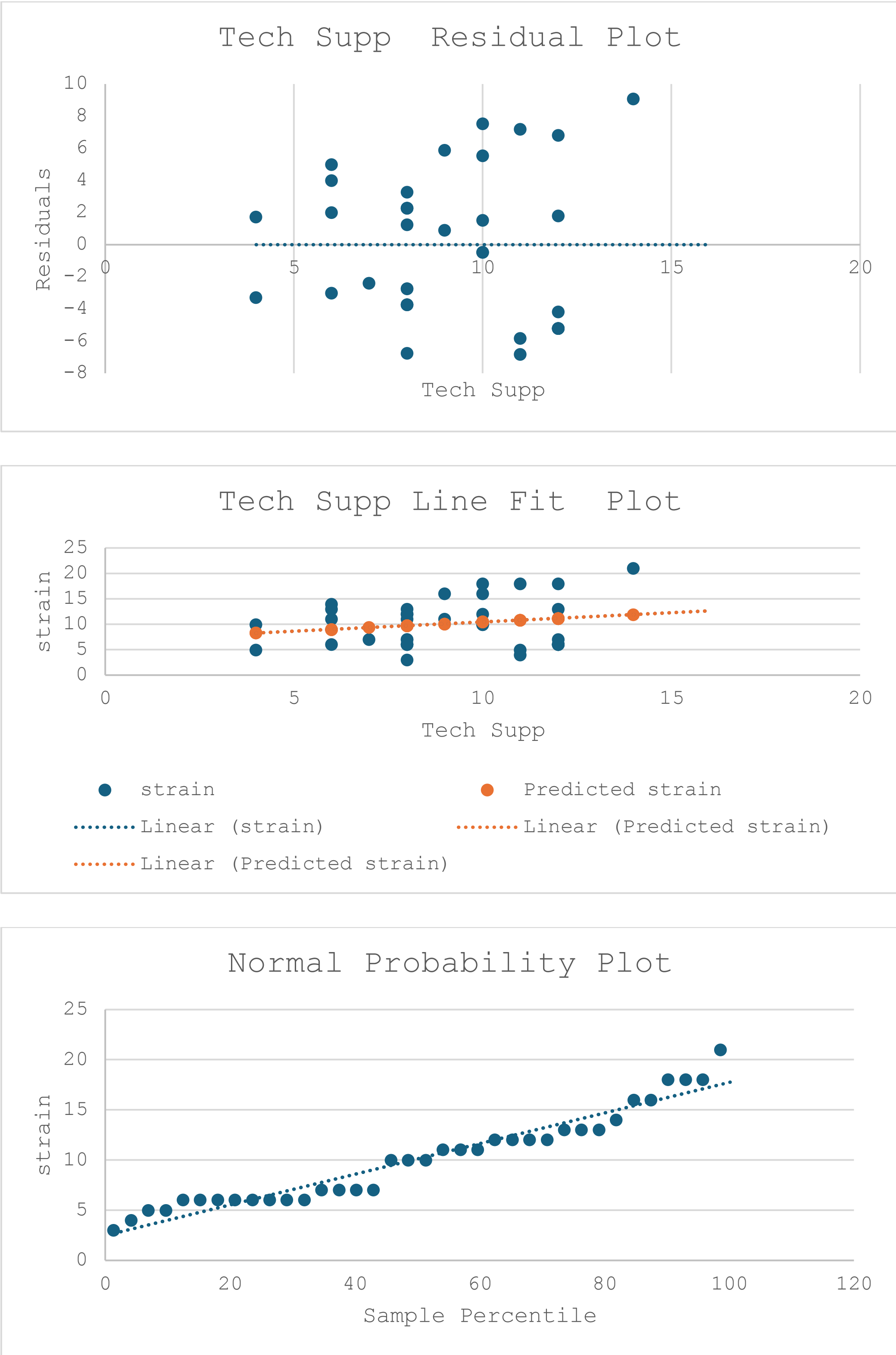

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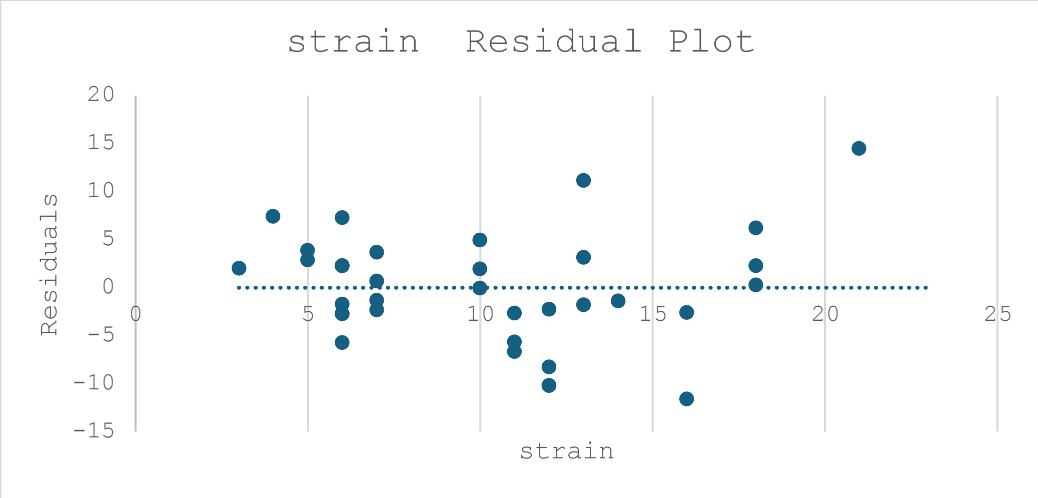

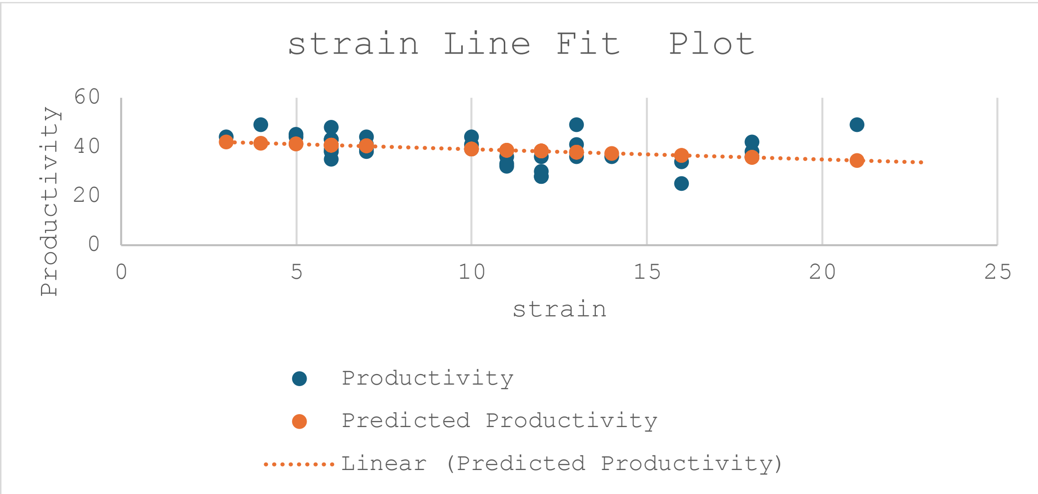

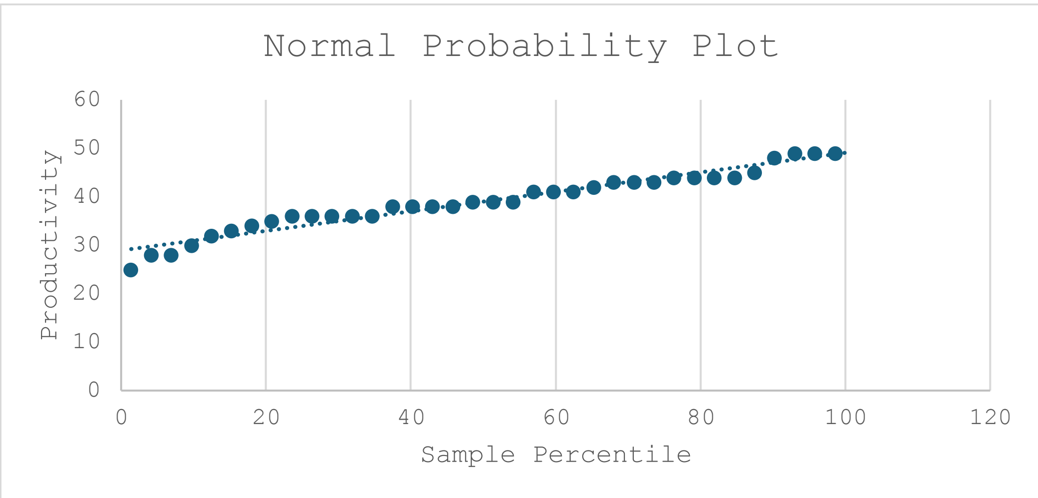

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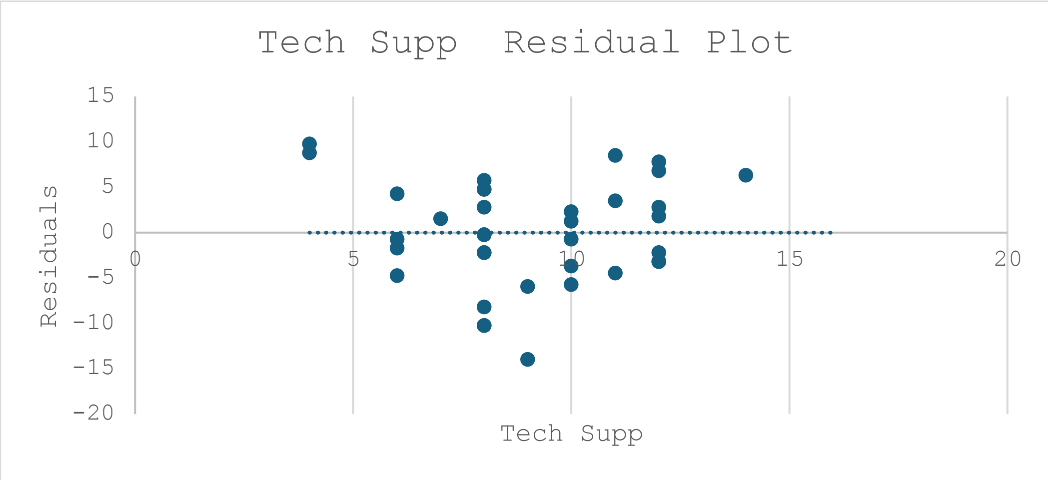

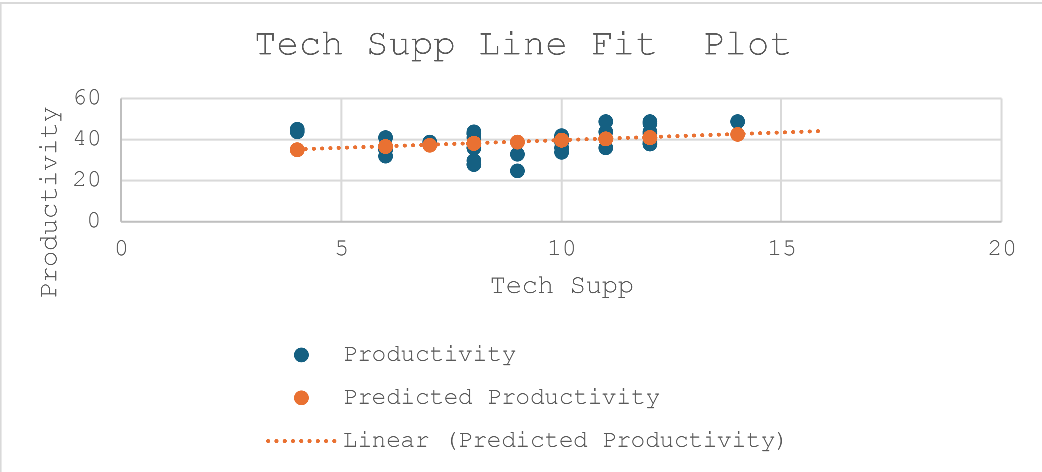

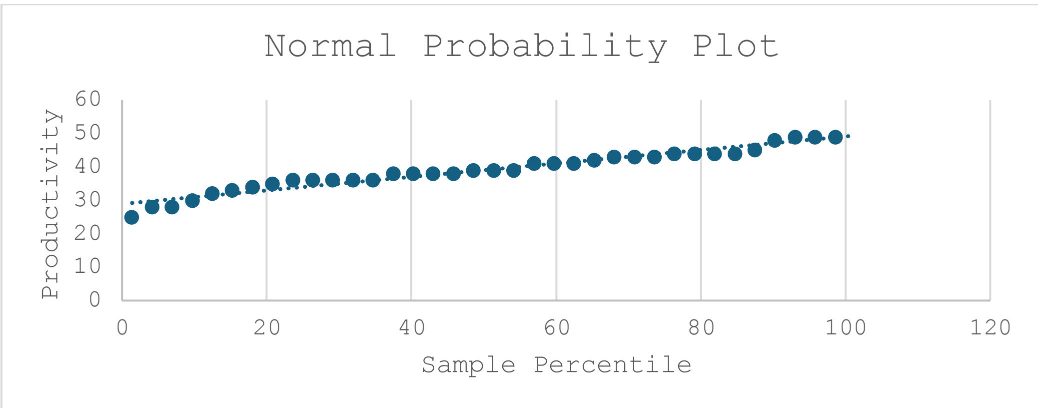

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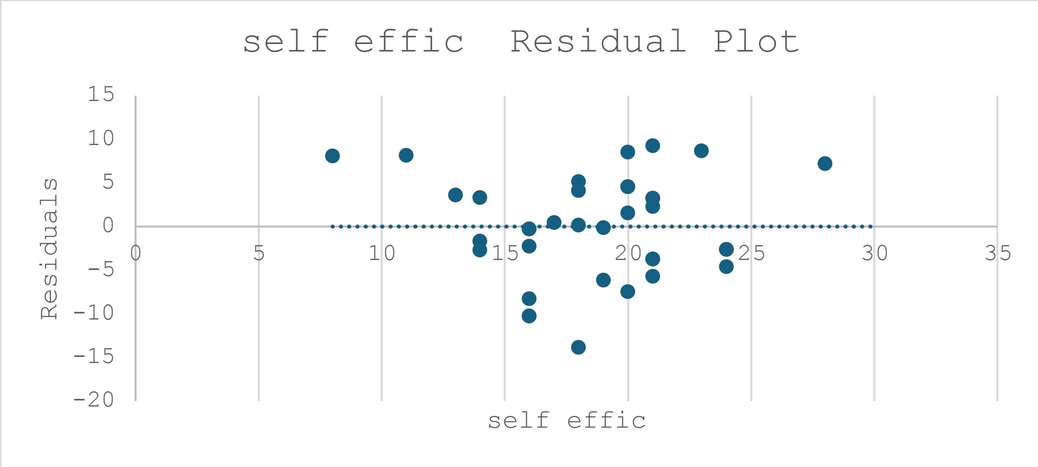

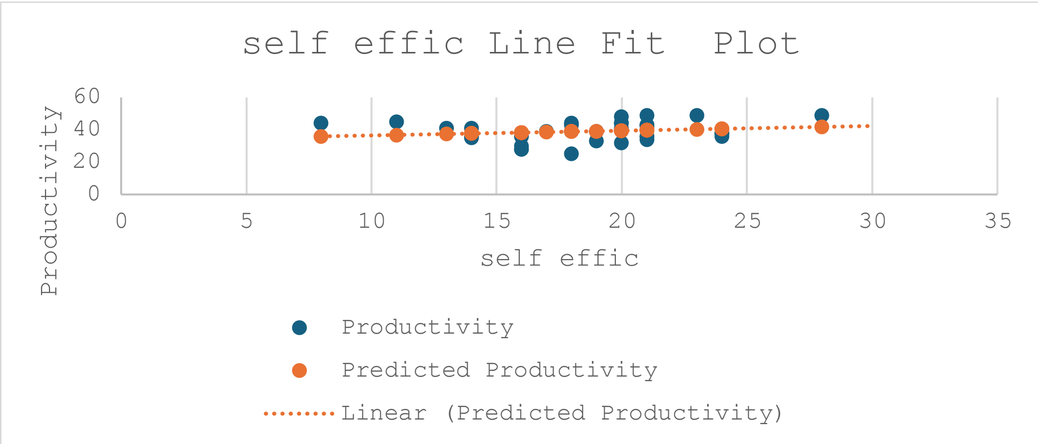

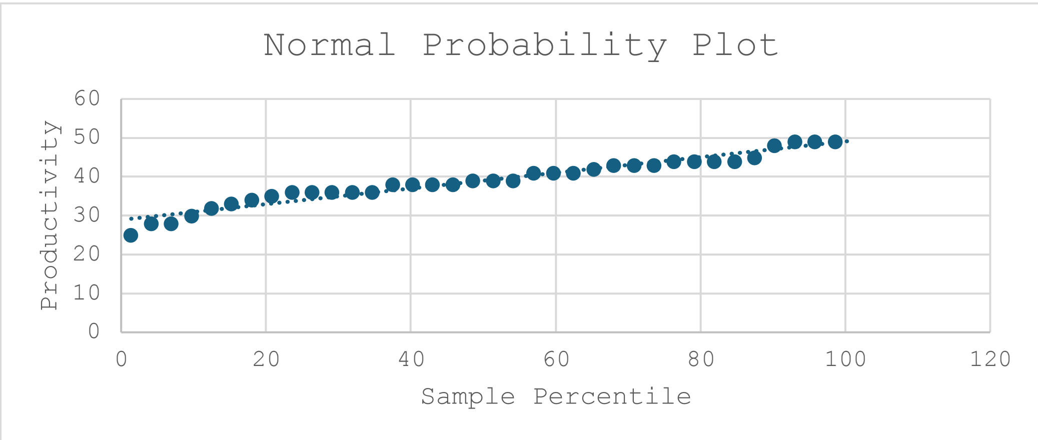

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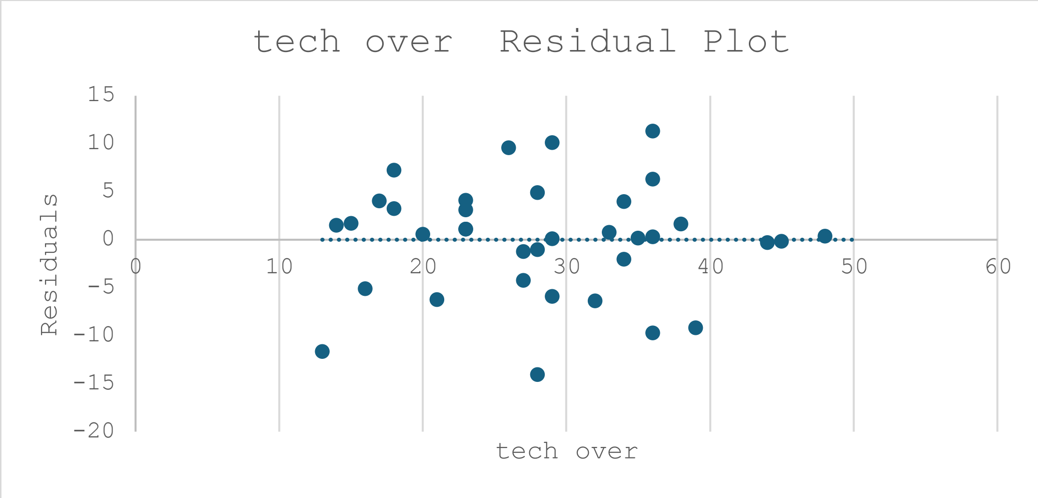

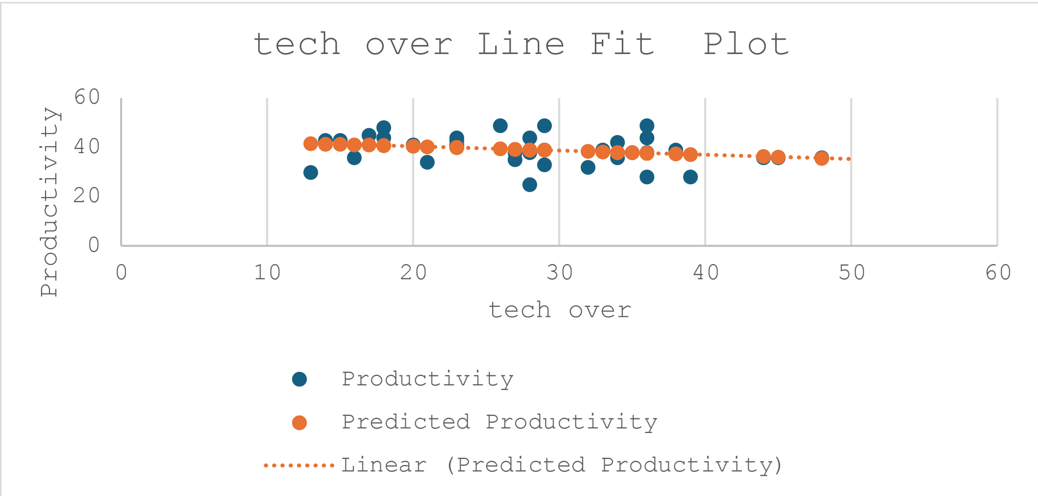

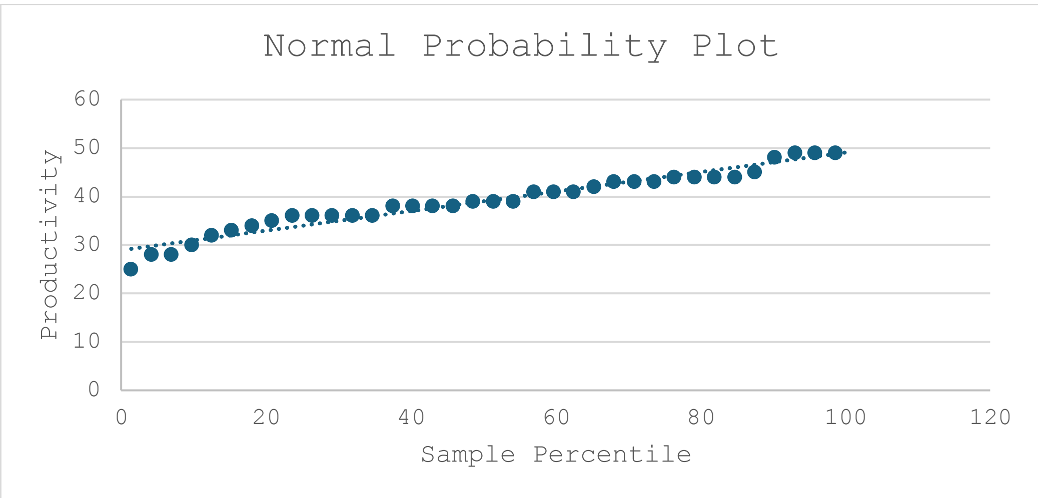

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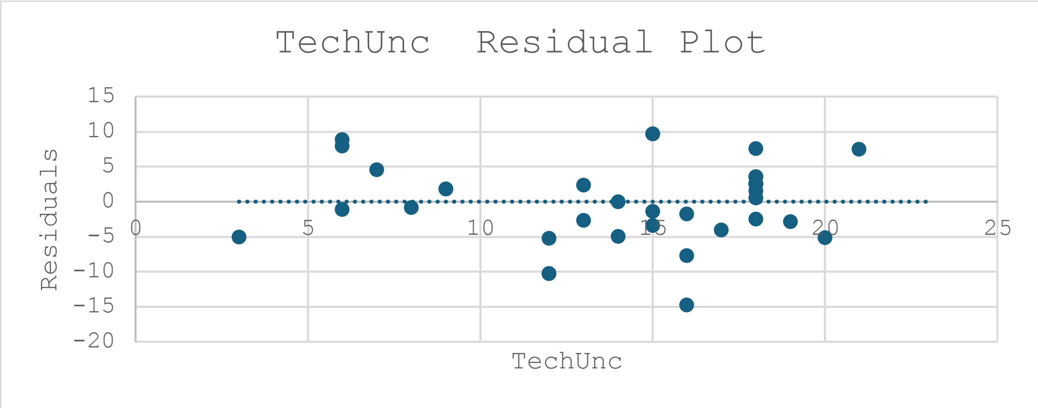
TechUnc Residual Plot
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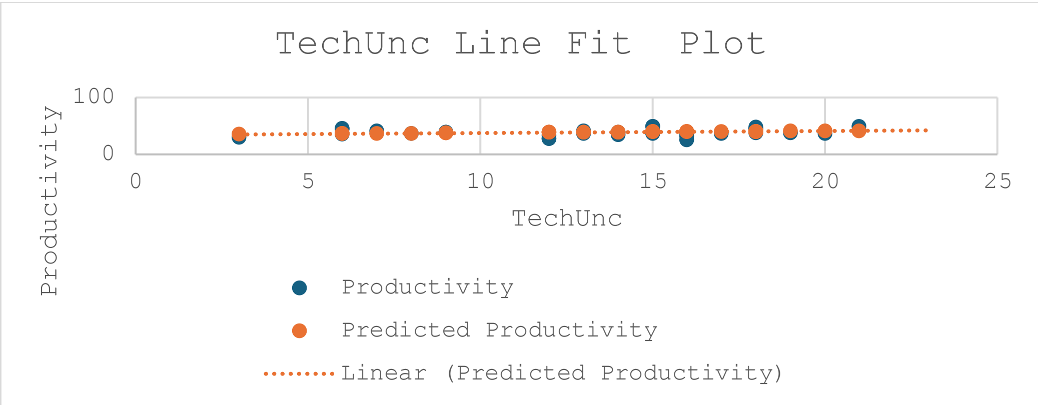
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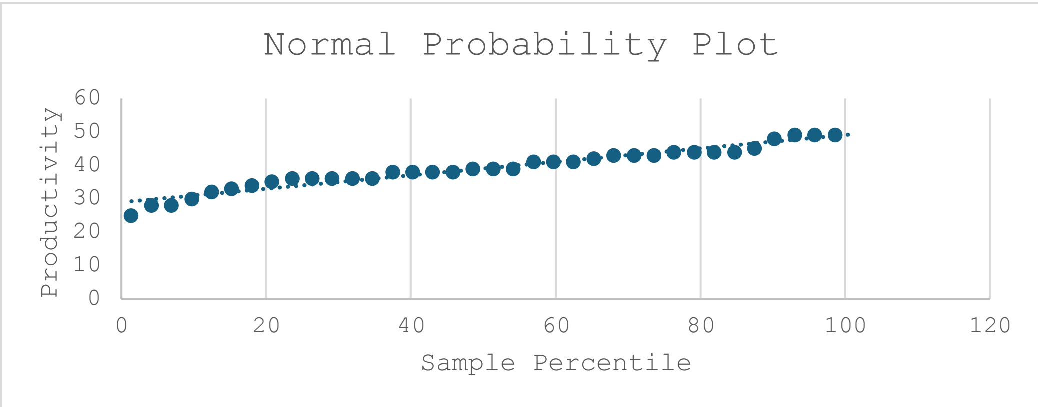
Normal Probability Plot
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100
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Sample Percentile

Te Komiti Matatika Rangahau | Human Research Ethics Committee

Te Tononga Rangahau Hōu | Application for a new research project

For Office Use Only	HREC Reference:	
Date Received:	Reviewers:	
Date Approved:	Approved:	(HREC Chair)

This document is to be completed by any UC Staff member or UC Student seeking Human Research Ethics Committee (HREC) approval to conduct research involving human participants. Please complete this application after reading the *Human Ethics Policy* available at https://www.canterbury.ac.nz/study/study-support-info/study-topics/human-ethics

Student applications must be reviewed and signed off by the student's supervisor.

Please remember that your audience for this application form will include community members and scholars from outside your discipline. All documentation must therefore be written in everyday language.

1. He Whakamahuki | General Information -

1.1. Project Title: Exploring the Dual Role of Technostress Creators and Inhibitors: Implications of AI Anxiety, Job Satisfaction and Technology Use

1.2. Primary Applicant Details *(staff member or student, adjunct, etc.).*

Name: Sreeta Majumder, Qing Zhao
University School/Department: Business information system taught master programme
Email address: sma537@uclive.ac.nz, qzh87@uclive.ac.nz
Student ID number (if applicable): 27592827

1.3. Additional research team members, or Supervisors (for student projects)

University School/ Department: Accounting&information systems
Name: Annette Mills Email address: Annette.mills@canterbury.ac.nz

University School/ Department: UC business school
Name: Click or tap here to enter text. Email address: Click or tap here to enter text.

University School/ Department: Click or tap here to enter text.
Name: Click or tap here to enter text. Email address: Click or tap here to enter text.

1.4. Does this research involve a clinical trial?

☒ No.

☐ Yes. Please contact the University's Financial Controller and inform them about the study for insurance purposes https://www.canterbury.ac.nz/about-uc/our-structure/service-departments/financial-services

1.5. Is this application for a project that has already received research ethics approval from an external ethics committee (e.g., Health and Disability Ethics Committee or another university's ethics committee) or organisation? PLEASE NOTE: HRC-funded applications require HDEC review.

☒ No. Please complete this application.

☐ Yes. Please provide details and forward copies of the approved application documentation and approval confirmation. Do not complete the rest of this application unless advised.

1.6. What is the academic purpose of the research project?
Please select one option.

☐ Staff research ☐Doctoral research (e.g., PhD, EdD) ☐Master's research

☐ Honours research ☒Other (please specify e.g., final year project) MBIS673 Applied Research Project

2. Te Tirohanga Whānui | Project Aims and Overview -

2.1. Please provide a brief easy-to-read summary of the project (up to approx. 300 words e.g., background and purpose of the project).

This research project examines the effects of artificial intelligence (AI) use on employees in the workplace. More specifically, the project aims to explore the effects of AI use (such as anxiety, and stress) and its impact on job satisfaction. The outcome may provide insights that can help organisations build a healthy workplace by finding effective ways to manage technostress, improve employee well-being, boost long-term technology adoption and optimise organizational performance.

2.2. What are the research objectives (questions or hypotheses) of this project?

What impact does the use of artificial intelligence in the workplace have on employees (e.g. technology stressors), and what are the consequences?

2.3. Which research methodology/ies will be used to collect data?
Please select all that apply.

☒ Survey/ Questionnaire ☐ Interview ☐ Kaupapa Māori

☐Experiment ☐Observational ☐ Focus group

☐ Other (please specify) Click or tap here to enter text.

2.4. Does the research involve multiple phases (e.g., survey and focus groups, or multiple surveys, or a pilot study followed by a main study)?

☒ No.
☐ Yes. Please briefly describe each phase (i.e., description, purpose, research methods etc.) Click or tap here to enter text.

3. Ngā Tūraru me ngā Matatika | Risks and Ethical Issues

3.1. Please indicate each of the following criteria that apply to this research (either for the participant or the researcher)

YES	NO	
☐	☒	Physical risks (e.g., Invasive physical procedures or potential for physical harm)

☐ ☒ Psychological risks (e.g., tasks that might cause emotional stress)

☐ ☒ Social risks (e.g., peer group involvement, participants are known to the researcher)

☐ ☒ Employment/professional/service user risks (e.g., if an employer can identify who did/did not participate in a study)

☐ ☒ Personal or sensitive issues (e.g., that people don't typically discuss with unfamiliar people)

☐ ☒ Cross-cultural issues (e.g., topics focussed on aspects of different cultures or countries)

☐ ☒ Moral or religious issues (e.g., participant demographics and/ or topics involved)

☐ ☒ Investigation of illegal behaviour(s)

☐ ☒ Invasion of privacy

☐ ☒ Collection or use of information that might be disadvantageous to participants

☐ ☒ Use of information already collected for which agreement of use/confidentiality was not agreed upon at the time data was collected

☐ ☒ Conflict of interest (e.g., the researcher is also the lecturer, teacher, treatment provider, colleague or employer of the research participants, or there is any other power relationship between the researcher and the research participants

☐ ☒ Participants who are unable to give informed consent (e.g., children under 16 years)

☐ ☒ Audio or visual recording without participants' consent

☐ ☒ Withholding benefits from "control" groups

☐ ☒ Inducement over a nominal amount to recompense costs, e.g. a $30 petrol voucher

If "YES" was selected for any of the above, please describe the potential risk in detail, and explain how this will be mitigated. Please also explain each risk and the steps taken to mitigate these in the Participant Information Sheet.

If "NO" was selected for all of the above, please provide an explanation below as to why the research is low-risk (i.e., no higher risk than a participant might expect to experience in everyday life).

Based on the guidelines outline by the Human Ethics Committee, this research is considered low risk, It doesn't involve deception, threat,invasion of privacy ,mental, physical or cultural risk or stress, or gathering of illegal information or of personal information of a sensitive nature about or from individuals. The information gathered is limited to their responses provided in this research project.

4. Ngā Kaiwhakauru | Research Participants

4.1. Who are the participants and why have they been chosen?

Studies show that when new technologies are introduced in the workplace these can lead to technology stress and anxieties that impact employee's work, e.g. job satisfaction, work productivity etc. This study aims to uncover the effects of artificial intelligence (AI) use on employees in the workplace. The participants have been selected because they use/have used AI tools (e.g. GenAI) for their work.

4.2. What selection criteria and/ or exclusion criteria will be used (e.g., randomly, by age, gender, ethnic origin, other)?

A filter question will be used so that only persons over the age of 18 years and who use/have used AI tools in the work place will be invited to participate in the study.

4.3. How many participants will be recruited?

Minimum number: 35 Maximum number: 50

Note: Please include statistical justification if appropriate. If the study involves multiple groups/ phases, please state numbers for each group/ phase.

4.4. Will the research involve children or youth aged 17 or younger?

☒ No. (go to 4.5)
☐ Yes. Please provide details. Click or tap here to enter text.

4.4.1 Will researchers be interacting in-person with children or youth aged 17 or younger?

☒ No. (go to 4.5)
☐ Yes. Please confirm that each researcher working with children or youth has a current relevant professional registration (e.g., NZ Teaching Council) or a current children's worker safety check. Click or tap here to enter text.

4.5. Will the research involve adults with diminished capacity to provide informed consent (e.g., people with cognitive impairment)?

☒ No.
☐ Yes. Please provide details. Click or tap here to enter text.

4.6. Please describe how potential participants will be identified.

Survey questions will be on a poster on the UC campus and via LinkedIN/Facebook. A filter question will be used so that only persons over the age of 18 years and who use /have used AI tools in the workplace participate in the study

Note: The use of publicly available contact information is recommended. If privately held contact details (e.g., lists obtained from organisations) are to be used, participants must have consented to their contact details being used for this purpose. If a researcher was to receive private contact details of a third party, this could potentially breach the Privacy Act. Usually, if a snowball recruitment method is to be used, participants and/or others should be given an information sheet or advertisement that they can give to others, in the hope that those third parties will then contact the researcher. Further guidance on privacy can be found in the policies of the University https://www.canterbury.ac.nz/about-uc/corporate-information/policies , and on the website of the Privacy Commissioner https://www.privacy.org.nz/

4.7. Please describe how potential participants will be recruited – i.e., by whom, when, and how will information be given to potential participants?

This study will invite participants via advertisement through Facebook, LinkedIn and poster advertising on the UC campus.

Note: Please detail the specific processes used to provide project information and to obtain consent. It is important that these processes allow the participant the opportunity to say no or withdraw without stress, embarrassment or difficulty.

Note: It is generally expected that participants will receive project information, which they must be able to retain, before being asked to provide consent. Participants should be provided with sufficient time and space (free from any form of pressure) to decide whether or not they will participate. For example, provision of information to participants several days before any interview or focus group is recommended.

4.8. Will the recruitment process involve the use of emails, advertisements, phone calls or other forms of contact with potential participants?

☐ No.

☒ Yes. Please include copies of emails, advertisements and/ or oral scripts with the application *(including e-advertising, e.g., Facebook) and discuss any permissions that you have or might need to seek (e.g., from organisers of social media/blog/comments pages). See Poster Appendix III*

4.9. Will each participant receive written project information?

☒ Yes. Please attach a copy of each version of the Information Sheet as an appendix.
Information sheet attached Appendix II

☐ No. Please provide supporting rationale. Click or tap here to enter text.

Note: It is expected that all participants receive written project information (exceptions could be participants who have difficulty reading or where there are cultural reasons). Separate Information Sheets should be provided for different participant groups, e.g., child and parent versions, teachers, organisation managers. See here for examples: https://www.canterbury.ac.nz/study/study-support-info/study-topics/human-ethics

4.10. Please describe the procedures to be followed if more people express interest in participating than can be accommodated, or the planned recruitment is not successful in recruiting the target number of participants.

If the target falls below the number expected, the advertising will be extended (e.g. via FaceBook and LinkedIn networks).

4.11. How much time will participation involve for an individual participant?

The survey form will take 10 minutes.

Note: For research with multiple phases, please provide an anticipated time for each phase and an overall total time. If the project involves long interviews or observations, please consider offering breaks.

4.12. What are the anticipated benefits to participants?

There are no direct benefits expected from completing this interview, the use and importance of AI in organisations is increasing. The findings may provide insights to help organisations build a healthy workplace and long-term technology adoption on employees when introducing new tools (like AI) into the workplace.

4.13. Will some form of inducement be used to support recruitment (e.g., vouchers, koha, food, contribution to course assessment, reimbursement of a direct cost)?

☒ No.

☐ Yes. Please provide specific details on the type and amount of inducements, and the source of funding for the inducements. Click or tap here to enter text.

Note: inducements should acknowledge participants' contribution to the research or provide reimbursement of direct costs incurred (e.g., travel). Refer to information about vouchers and incentives on HREC webpages for a more detailed explanation.

4.14. Will information about participants be obtained from any source other than the participant?

☒ No. Go to section 5.
☐ Yes. Please provide specific details about the source, procedures and why this information is needed. Click or tap here to enter text.

Note: For example, medical, educational, personnel or other confidential records. Please ensure the information sheet is very clear about any data gathered in this way and explain how you intend to gain permission to use the data.

5. Te Whakaae a ngā Kaiwhakauru | Consent by participants

5.1. Is each participant capable of providing informed consent to participate?

☒ Yes.
☐ No. Please provide details. Click or tap here to enter text.

Note: Children and young adults under the age of 16 years (or 18 years if still at school) require parental/caregiver consent. Adults who have impairments that limit their capacity to represent themselves also need caregiver/ legal guardian/ advocate consent. Such participants should be provided with a suitable information sheet and provide written or oral 'assent' as appropriate.

5.2. How will consent be obtained from each participant?

☐ A signed consent form. Please attach a copy as an appendix. Click or tap here to enter text.
☒ Online survey/questionnaire consent statement.
☐ Other. Please provide details.Click or tap here to enter text.

Note: Where you do not intend to gain written consent, (i.e., where you will rely on oral consent etc.) please justify and explain how you will obtain consent (e.g., recording the oral consent is often appropriate).

Note: Projects that ***only*** *involve an anonymous questionnaire may not necessarily require a separate consent form, provided that the questionnaire includes relevant study information, your name and contact number.*

5.3. Will the research involve any of the following activities?

☐ Audio or video recording.
☐ Publication of identifying information (e.g., names, organisations etc).
☐ Retention of data for future use by other researchers.
☐ Future use of participants' contact information.
☐ Parental or caregiver consent for child participants/those unable to provide consent.
☒ None of the above.

If applicable, please ensure participants are clearly informed about these aspects of the research and provide specific consent for each one.

Note: Even when decisions are taken by another (e.g., caregiver), it is good practice to seek the assent (agreement of someone who is unable to give full informed consent) of the person on a regular basis and watch out for verbal or nonverbal signs of distress or disengagement.

For future use of contact information, please provide the rationale and confirm that specific consent for this will be sought in the Consent Form. Click or tap here to enter text.

6. Te Hanga Ngātahi me te iwi Māori | Engagement and Co-design with Māori

This information informs the committee about aspects of the research that may have implications for Māori and the need for Māori engagement and co-design considerations.

Will the research involve -

YES	NO	
☐	☒	Intentional recruitment of Māori participants?
☐	☒	Recording of ethnicity for reporting of Māori participants' data?
☐	☒	Implications for iwi Māori stemming from the design, implementation or outcomes?
☐	☒	Significant Māori content, use of culturally sensitive material or knowledge?
☐	☒	Access to Māori sites, or sampling of flora/fauna?

Note: If the answer is 'YES' to any of the criteria above, please contact a Kaiārahi Māori/Māori research advisor. Kaiārahi will be able to help assess whether to seek further co-design and engagement, and whether to contact the Ngāi Tahu Consultation and Engagement Group (NTCEG). If a Māori steering group/senior Māori advisor is working with you on the project, please check with them on the need for contact with NTCEG.

Please provide evidence that engagement has occurred OR, if it is underway, provide a copy of the outcome once it is available.

Click or tap here to enter text.

7. Ētahi atu Hunga | Other Organisations, Community groups or Interested Parties

7.1. Will the research require permission from, or consultation with, another organisation (e.g., school, government agency, business, community group etc.) to recruit participants or access information?

☒ No.
☐ Yes. Please provide details. Click or tap here to enter text.

Note: For example, Parents, guardians, school principals, teachers, boards, responsible authorities including employers, etc. If the response is yes, please explain how this approval has been or will be obtained (and attach copies of relevant correspondence).

Note: Consultation with a community is recommended when the research involves participants from an identifiable group (e.g., geographically-bounded, like-minded individuals, specific hobbyists, specific professional group). A useful, though not exhaustive test of whether a community should be consulted, is whether that community has a leadership group that can be contacted. Once support or approval is obtained please forward this to HREC. The HREC understands that in many cases, consultation is informal, and does not produce official approval documents. In such cases, simply note with whom consultation has taken place, why it is those particular communities/individuals, and provide contact information.

7.2. Is the research funded by, or carried out on behalf of, another organisation?

Note: as above, HRC-funded research requires review by the Health and Disability Ethics Committees, and cannot be reviewed by the UC HREC.

☒ No.
☐ Yes. Please provide details. Click or tap here to enter text.

7.3. Is an Intellectual Property (IP) or Data Sharing agreement with an external organisation in place for this research?

☒ No.
☐ Yes. Please attach a copy of any such agreements. Click or tap here to enter text.

7.4. Is it possible that an organisation (e.g., school, business, employer) will be named or be able to be identified in any publication or presentation resulting from the research?

☒ No.
☐ Yes. Please explain if you intend to seek organisational approval for this, or why you have decided not to seek this approval. Click or tap here to enter text.

7.5. Is there any conflict of interest (potential, perceived, or actual) for the researcher(s) and/or organisation(s) involved?

☒ No.
☐ Yes. Please describe and note how this is to be managed. Click or tap here to enter text.

The UC Conflict of Interest Policy can be found here: https://www.canterbury.ac.nz/about-uc/corporate-information/policies/conflict-of-interest-policy

8. Ētahi atu Hunga | Location of Research

8.1. Where will the research take place?

The survey will be administered online via UC Qualtrics. Participants will be able to access and do the survey in their own space.

Note: Locations should provide sufficient privacy and comfort for participants. It is generally recommended that interviews are NOT conducted in private homes. The HREC appreciates that in some cases there may be good academic reasons for conducting research in private homes. If you believe this applies to your project, please provide concise justification of why research in private homes is necessary for your project, and detail how you anticipate and will seek to mitigate potential risks to both participants and researchers when undertaking research in private homes (e.g., by attaching a researcher safety or fieldwork plan).

Note: in the case of research involving children, young adults and participants who need particular care, an adult other than the researcher is required to be present.

8.2. Will any participants be located outside Aotearoa New Zealand?

☐ No.
☒ Yes. Please provide details. Recruitment via FaceBook and LinkedIn may include participants located outside New Zealand

8.3. Will the researcher(s) be based outside Aotearoa New Zealand?

☒ No.
☐ Yes. Please provide details. Click or tap here to enter text.

Note: Te Kura Tāura | UC Graduate School must be informed of any student overseas travel for research purposes.

8.4. Will any research documents require translation into another language?

☒ No.
☐ Yes. Please provide details (i.e., which documents, what languages, who will provide the translation). Copies of translated material should be provided with the application. Click or tap here to enter text.

9. Ngā Tirohanga me ngā Rārangi Uiui | Surveys or Questionnaires

9.1. Will a survey or questionnaire be used to collect data?

☐ No. Go to section 10.
☒ Yes. Please provide a copy of the survey or questionnaire as an appendix. See Survey Questions Appendix I

9.2. How will the survey or questionnaire be distributed and responses collected?

☒ Online via Qualtrics.
☐ Other. Please describe procedures. Click or tap here to enter text.

Note: The University has a Qualtrics licence in place for all staff and students. All online surveys of UC staff or students must use Qualtrics. If the research involves an online survey platform other than Qualtrics please provide the rationale *https://www.canterbury.ac.nz/about/ako/evaluation-and-student-insights/qualtrics-survey-support/*

9.3. Will the survey or questionnaire responses be anonymous, confidential, or neither?

☒ Anonymous (i.e., no personal or identifying information is captured that can be linked with participant responses)

Note: Qualtrics provides a facility that supports separate capture of participant contact details for the return of study findings and/ or an incentive prize draw to ensure participant anonymity. See *https://www.canterbury.ac.nz/about-uc/what-we-do/teaching/evaluation-and-student-insights/qualtrics-survey-support* *for support.*

☐ Confidential (i.e., personal or identifying information is captured and will be stored securely, not disclosed, reported or published).

Note: Researchers must ensure that stored data is separated into identifying data (e.g., consent forms, coding forms), and disguised (e.g., coded data, identities obscured in transcripts). This can be done by assigning participants a code on the consent form, and using that code on any data, or transcripts, etc.

☐ Neither anonymous nor confidential. Please provide rationale Click or tap here to enter text.

9.4. If the research involves an online survey/questionnaire presented to UC students please confirm that the UC Student Evaluation and Insights team has been consulted and provided approval.
See https://www.canterbury.ac.nz/about-uc/what-we-do/teaching/evaluation-and-student-insights/surveying-uc-students--procedures--policies--and-survey-calendar

☒ Not applicable.
☐ Student Evaluation and Insights team has been consulted and provided approval *(please attach approval as an appendix*).

10. Ngā Uiuinga | Interviews

10.1. Will interviews be used to collect data?

☒ No. Go to section 11.
☐ Yes. Please describe the interview procedures (e.g., welcome/introduction/refreshments) and provide a list of the planned questions (for structured/semi-structured interviews) or discussion topics (for unstructured interviews). Yet to be planned

10.2. Will interviews be recorded?

☒ No.
☐ Yes. Please indicate the type (i.e., audio, video) and purpose of the recording. Audio recording

Note: Recorded digital files should be uploaded to secure storage and deleted from portable recording devices as soon as practical. Participants must be fully informed about, and consent to, the use of recordings.

10.3. Will participants be offered a copy of the interview transcript to review/confirm?

☒ No.
☐ Yes. Please describe the process and timeline (e.g., when and how will participants be provided with the transcript? How long will they have to review and advise of any amendments, etc.?) Click or tap here to enter text.

10.4. Will a person outside the research team be used to transcribe interviews?

☒ No.
☐ Yes. Please attach a copy of the confidentiality agreement as an appendix.
Click or tap here to enter text.

11. Ngā Rōpū Arotahinga | Focus Groups, Hui, Wānanga, Talanoa

11.1. Will focus groups, Hui, Wānanga, or Talanoa be used to collect data?

☒ No. Go to section 12.
☐ Yes. Please describe the process (e.g., the number of people in each group, welcome/introduction, refreshments) and provide a list of the planned questions/discussion topics.

Please include a copy of the confidentiality statements that all participants will sign OR explain how the confidentiality of participants will be protected. Click or tap here to enter text.

11.2. Will the focus group, Hui, Wānanga or Talanoa be recorded?

☒ No.
☐ Yes. Please indicate the type of recording to be used.

☐ Audio ☐ Video ☐ Field notes ☐ Photos

Note: Recorded digital files should be uploaded to secure storage and deleted from portable recording devices as soon as practical. Participants must be fully informed about, and consent to, the use of recordings.

11.3. Will a person outside of the research team be used to transcribe these discussions?

☒ No.
☐ Yes. Please attach a copy of the confidentiality agreement as an appendix.
Click or tap here to enter text.

11.4. Will participants be asked to review a transcript of the discussion?

☒ No.
☐ Yes. Please describe the process and timeline (e.g., when and how will participants be provided with the transcript, how long will they have to review and advise of any amendments etc.). Please also describe how confidentiality/privacy issues will be addressed. Click or tap here to enter text.

Note: Please note that issues of privacy and confidentiality arise when participants receive a transcript that includes statements or information attributable to other individuals in the group. Ensuring participants are fully informed about this at the point of providing consent is important.

12. Ngā Whakamātau, ngā Whakatātare | Experimental* or observational studies **Experimental studies include intervention research involving measurement of any individual or group changes in response to teaching or learning activities.*

12.1. Will the research involve an experiment, or observation of participants?

☒ No. Go to section 13.
☐ Yes. Please briefly describe the experiment or observations.Click or tap here to enter text.

12.2. Will the experiment or observations involve audio, video or photographs of participants?

☒ No. Go to Section 13.
☐ Yes. Please indicate:

☐ Audio
☐ Video
☐ Photographs.

Please specify below how you will avoid capturing those who are not participants in your research. Click or tap here to enter text.

Note: Recorded digital files should be uploaded to secure storage and deleted from portable recording devices as soon as practical. Participants must be fully informed about, and consent to, the use of recordings.

13. Te Nukarau | Deception

13.1. Will the research involve any deception (e.g., some study objectives are withheld from participants until after they have completed tasks)?

☒ No. Go to section 14.
☐ Yes. Please describe the deception, the rationale for the deception, and the debriefing process.
Click or tap here to enter text.

☐ A copy of the debriefing sheet is attached (this should typically include reasons for the deception, further relevant study details and information advising participants that they can withdraw from the study once they are made aware of the deception). Click or tap here to enter text.

14. Ngā Raraunga: te kohi, te pātengi, te whakamahi | Data collection, storage and use

14.1. Does the research involve the collection and storage of electronic data?

☐ No.
☒ Yes. Please describe the secure storage procedures. Data will be stored on a password protected device and on UC OneDrive

Note: Secure storage of data should, when possible, utilise UC computer servers, password-protected devices, and individually password-protected files for data containing identifiable and/or sensitive data. The HREC acknowledge that data is often stored on staff/student portable or home-based computers and external hard drives. These files should be backed up to UC server and password-protected on devices.

14.2. Does the research involve collection and storage of physical data (e.g., paper documents)?

☒ No.
☐ Yes. Please describe the secure storage procedures.Click or tap here to enter text.

Note: the HREC recommend that paper documents are either scanned to electronic copies and destroyed, or stored in lockable cabinets in lockable UC spaces (e.g., staff or student offices).

14.3. Are any comments or quotes from participants to be used in any publication or presentation?

☐ No.
☒ Yes. Please ensure participants are clearly informed in the information sheet, and consent to this in their consent form.

14.4. Are there plans to make these data available to researchers outside the research team?

☒ No.
☐ Yes. Please provide details. Click or tap here to enter text.

Note: the HREC recommend that confidentiality agreements are in place when sensitive or identifiable data is made available to external researchers. Please note that participants should be clearly advised on the Information sheet, and consent to this data sharing in the consent form.

14.5. Please confirm when the data will be securely destroyed

☐ 10 years after completion of the research project (Staff/PhD research).
☐ 5 years after completion of the research project (Master's research).
☐ On completion of the research project (Honours or undergraduate project research).
☒ Other. Please provide details. Data collected for this study will be held for up to 5 years for use in publications, and archived thereafter for combining / comparing with future data collections

Note: If data retention and destruction plans differ from the UC guidelines above, please provide the details and rationale. For example, some funders (such as MBIE) may require permanent or indefinite retention of the data.

14.6. Please indicate where data may be published or used (select all that apply).

☒ Academic or professional journal article(s).
☒ Academic or professional conference, seminar or workshop.
☐ Thesis (e.g., PhD or Masters) available in the UC Library.
☒ Dissertation or project report (e.g., Honours) NOT available in the UC library.
☐ Organisations (e.g., Government agencies, schools).
☐ Other. Please provide details.Click or tap here to enter text.

14.7. Will participants be offered a summary of the results?

☒ Yes.
☐ No. Please provide the rationale. Click or tap here to enter text.

15. Ngā Tauākī me te Tukunga | Applicant declaration, signatures and submission

15.1. Researcher's Declaration

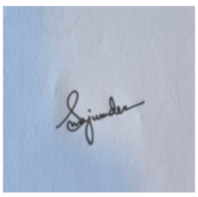
☒ I am applying for ***Ethical Approval*** for the research project as outlined above.

☒ The project has been accurately described in this application and I have included all the necessary documents and information to support this application.

☒ I will conduct this research within the bounds of any approval given by the Human Research Ethics Committee of the University of Canterbury.

☒ I will inform the Committee in writing should circumstances relevant to this application change, and if necessary obtain approval for an amendment.

Principal Researcher's Name: Sreeta Majumder

Signed (type or e-signature):  Click or tap here to enter text.

Date: 30/09/2024

Note: The principal researcher is the student or staff member leading the research.

15.2 For Academic Supervisors of Student projects only (tick/check all that apply)

*Please note that applications for ethical approval **<u>are not usually considered</u>** if the student has not submitted their research proposal for registration.*

☒ This is a student project that does not require a research proposal OR

☒ The student has submitted or registered their research proposal for consideration.

☒ I have read the student's application for ethical approval including any appendices such as Information Sheets and Consent Forms as required.

☒ I undertake to work with the student on any revisions required by the University's Human Research Ethics Committee before these revisions are returned.

Academic Supervisor's Name: Annette M Mills

Signed (type or e-signature): **Annette M Mills**

Date: 03/10/2024

15.3 Submission Instructions

Please email an electronic file (.pdf or Word format only) containing this completed application and please also separately attach all relevant documents clearly identified (e.g., study advertisement, Information sheet, Consent form etc.) to human-ethics@canterbury.ac.nz

Please include a list of references for any citations used in the Application Form below:

Click or tap here to enter text.