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Employee Well-being in the Digital Age: A Study on Microsoft Teams Users

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Abstract

Background: This study is a comparative investigation of the influence of ICTs on employee well-being, with an emphasis on basic psychological needs as defined in Self Determination Theory. Based on the Motivation, Engagement, and Thriving in User Experience Model, it compares the levels of need satisfaction of Microsoft Teams users across three user experience levels, also known as spheres (interface, task, and life) in the model. Further, comparisons are made based on the users' profession (IT employees and college teachers), and the device type (smartphone, laptop, and desktop).

Method: A cross-sectional study of 120 Teams users was conducted. Non-parametric tests were employed for comparisons since the data were not normally distributed.

Results: The results revealed significant differences in need satisfaction across spheres ($p<0.001$). Competence satisfaction surpassed autonomy and relatedness satisfactions in all three spheres ($p<0.001$). IT employees experienced higher satisfaction than teachers along many needs, the largest being for life relatedness ($p<0.001$). Furthermore, smartphone users experienced more need satisfaction than laptop users with the largest effect for interface competence ($p=0.003$; rrb=0.503).

Conclusion: The study underlines the need for technology design that caters to different levels of user experience, professions, and device types. It provides guidance to technology designers for enhancing user well-being through customized designs as per user group and context of use.

Keywords: workplace technology, remote work, self-determination theory, Microsoft Teams, well-being.

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Introduction

Remote employment has become commonplace in organizations worldwide as a result of the COVID-19 pandemic.[1] In a remote work arrangement, employees work away from their primary workplace and often at home.[2,3] Employees make use of information and communication technology (ICT) to perform the job. According to a 2023 global survey of full-time employees, 8% work fully from home and 26% in hybrid settings.[4] Hybrid work is a combination of working remotely and working from the office, where employees switch between remote work and in-office work during the week.[5] 2023 data from the Indian context show that 12.7% of workers are in remote employment, while 28.2% follow the hybrid model.[6] In the United States (US), remote employees make up 13% and hybrid workers 27% of full-time workers as per a recent 2025 report.[7] Although remote working became the new normal only during the pandemic, it became popular in the past decades due to the development of information and communication technologies, or ICTs.[8] Lin and Kwantes[9] note that technology is rapidly being used for communications within organizations. Digital solutions such as Zoom, Microsoft Teams, and Google Meet facilitate communication among organizational members in diverse locations.[10] Microsoft Teams combines several tasks like chat, video conferencing file sharing, and collaborative tools all in a single application. Teams also has tailored versions for business enterprises and educational institutions.

Smite et al.[11] assert that due to its widespread use and the consequent work-life balance, remote work is here to stay. More than half of Americans expressing dissent for full-time in-office work in 2024 is evidence of the trend.[12] Furthermore, only 12% of US organizations with remote/hybrid arrangements in 2025 intend to change the status quo.[13] There is a clear need for hybrid work, as many employees choose to work from home at least two days a week. Lending credence to the aforementioned assertion, a 2022 Future Forum survey reported that 49% of knowledge workers worldwide operate in hybrid mode.[14] Many workers want to continue working remotely when the epidemic is over, according to another 2022 research.[15] Freedom to choose the place of residence is a major advantage of hybrid work,[16] which makes employees enjoy work and organizations perform better.[17] Employers must enable hybrid work by utilizing a variety of digital tools that allow for smooth employee interaction. Hybrid work requires technology with features that support video conferencing, virtual collaboration, and asynchronous communication.[18]

While ICTs can support people in carrying out their work-related tasks, they can also have a negative effect on how people feel. This is because ICTs are seldom designed to positively influence people's psychological experience. In order to ensure that technology supports or at least does not hinder the well-being of its users, Peters et al.[19] recommend that the technology design must support the three basic psychological needs. These needs are fundamental to an individual's well-being defined as "optimal psychological functioning and experience".[20] Consequently, it becomes necessary to assess the effect of ICTs used in the workplace on employees' basic psychological needs- autonomy, competence, and relatedness. Grounded in this notion, this study explores how the ICTs support or hinder these employee needs across different contexts.

ICTs used in the workplace are referred to as workplace technology in this paper. Workplace technology may be defined as "the software, systems, and apps employees use in their day-to-day jobs".[21] There is evidence for basic psychological need frustration that arises from the use of technology. Workplace technology may jeopardize an employee's autonomy in various ways. Employees experience long work hours and blurred work-life boundaries due to constant connectivity,[22-26] thus curbing their autonomy over daily schedules. Employees feel deprived of sufficient recess owing to consecutive virtual meetings.[27-29] They end up deferring work due to frequent interruptions and distractions from ICT use. These frustrate the autonomy need as employees cannot decide when and where to focus attention. Employees may experience competence frustration because of the perceived complexity of ICTs.[22] This frustration is exacerbated in the case of remote work owing to laxity in digital skills training.[30,31] Competence need is also compromised when the technology itself lacks competence.[25] Older people can find it relatively harder to cope with technological changes, leaving them feeling less competent than others.[32] Relatedness frustration manifests itself in different forms. Remote work is characterized by a diminished sense of belonging in the organization.[28,33] Virtual team relations may lack credibility,[34] which is also observed in supervisory relationships.[25] Other

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relatedness-specific challenges emerge from technology-supported interactions among employees. Futile emotional expression, restrained interactions in the absence of physical gestures and the mechanical nature of online communication are among the contributory factors.[1,35] This technology-induced need frustration in the workplace highlights how important it is for technology designers to consider autonomy, competence, and relatedness while evaluating a design.

In the present paper, the digital collaboration tool Microsoft Teams has been evaluated for its users' basic psychological need satisfaction, owing to its popularity across sectors. Teams is an application developed by Microsoft and designed to facilitate hybrid work through real-time collaboration and communication. Henceforth, it will be also referred to as MS Teams or Teams. Teams became especially popular in IT industry and academia during and beyond the pandemic. Teams helps educators to conduct virtual classes, manage assignments, collaborate in real time on Word, Excel, and PowerPoint documents as well as IT professionals in holding meetings, chatting with teammates, and sharing and storing documents securely. Although the effectiveness of Teams in facilitating teamwork, file sharing, virtual meetings, and pedagogy is known, there is a dearth of empirical studies investigating how it impacts the basic psychological requirements of its users. For instance, frequent meeting and message alerts can disrupt and undermine the autonomy of Teams users. When users receive little training on new/unfamiliar features in Teams, they can feel less competent. Relatedness need may be thwarted since interactions in Teams mostly comprise only short chats and emojis, and they are seldom unrelated to work. Therefore, this paper seeks to provide insights into how Teams can be designed to optimize the well-being of users.

The study draws on Self Determination Theory, and Motivation, Engagement and Thriving in User Experience (METUX) model to investigate basic psychological need satisfaction among Teams users. The Self Determination Theory (SDT) suggests that psychological wellness is contingent upon the satisfaction of three human needs- autonomy, competence, and relatedness.[36] In accordance with SDT, the fulfillment of each of the three fundamental psychological needs that people feel inside an organization is correlated with their overall well-being.

Autonomy means having the ability to do things on one's own initiative.[37] When one is able to act voluntarily, the desire for autonomy is met.[38] In the context of a digital tool like Teams, this can manifest as control over which notifications to receive and when. Competence is the ability to successfully complete activities that are reasonably challenging.[39] Successful completion of significant tasks satisfies competence needs.[40] The urge for competence is hindered in situations with significant obstacles. Similarly having little opportunity for upskilling can frustrate competence. Teams users may experience this if they find navigation difficult, or if features are not easily visible. The desire to give care to and receive care from significant persons is referred to as relatedness.[41] According to Ryan and Deci,[40] a person's relatedness demand is met when she sees herself as beneficial to others. Furthermore, relatedness is strengthened by a person's feeling of community. Through collaborative features that aid knowledge/resource sharing with colleagues, the relatedness need of Teams users can be supported.

Peters et al.[19], in 2018, created the Motivation, Engagement, and Thriving in User Experience (METUX) paradigm, in order to assess how technology affects people's well-being. It highlights the importance of meeting psychological needs at various stages of technology use. METUX applies the essence of SDT to digital technology by evaluating the effects of technology use on need satisfaction at different user experience levels. These levels, also known as spheres of user experience, demonstrate how technology may either enhance or diminish users' well-being depending on the manner in which they engage with it. The key spheres of METUX model are: interface, task and life. Direct user interaction with the interface is the focus of the interface sphere. The degree to which the design facilitates ease of use, user control, and meaningful interaction is correlated with autonomy, competence, and relatedness satisfaction at the interface level. The task sphere is about how well the technology facilitates the tasks that people seek to complete with the help of the technology (e.g. communication via Teams). In this context, it is evaluated how much need satisfaction is achieved while engaging in the specific task. The impact of technology

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use on the general aspects of life, like relationships, work-life balance, and overall well-being, is covered in the life sphere. For instance, employees may receive work-related alerts on Teams even during off hours and struggle to disconnect from work. This constant connectivity is known to disrupt their work-life balance.[42] Given the growing integration of digital tools into users' personal lives, evaluating their effects on life satisfaction is essential to comprehend the long-term effects of technology on mental health.[19] MS Teams is a case in point with its wide application in work routines that often extends into non-working hours.

Both SDT and METUX model emphasize the importance of basic psychological need satisfaction in a person's life. Following METUX, users' need satisfaction with digital technology must be evaluated across different levels of user experience. That is because a technology that is need-satisfying during direct interaction with the interface (interface sphere) can undermine need satisfaction while executing technology-supported tasks (task sphere) and even in the context of the user's life in general (life sphere). Furthermore, a digital tool may make the user experience varying levels of competence, autonomy, and/ or relatedness in each sphere of user experience. This depends on the features, functionalities, and context in which it is used. Based on this rationale, this study intends to find whether overall need satisfaction and individual need satisfactions vary across the three spheres of MS Teams. Therefore, it was proposed that:

H1: There is a significant difference in the basic psychological need satisfaction across the interface, task and life spheres of MS Teams.
H2: There are significant differences in the satisfaction of autonomy, competence and relatedness needs within the interface, task and life spheres of MS Teams.

A comparison of need satisfactions among user groups may also be relevant since people's perceptions of need satisfaction can vary depending on their profession, and the platform used. Klassen et al.[43] observe that teacher-student relationships are long-term and require more investment. This is in contrast with the client relationships in IT profession. Furthermore, teachers spend much working time away from their colleagues.[44] Teaching requires continuous adaptation to meet the changing demands of students and the job and hence, greater autonomy. Teachers and IT employees use Teams for different purposes. This can lead to differences in the features and functionalities frequently used by each group and their expectations of Teams. All of the above contribute towards differences in perception of need satisfactions between teachers and IT employees. So, it was hypothesized that:
H3: There are significant differences in basic psychological need satisfactions between IT employees and teachers using MS Teams.

It is also possible for users to have varying experiences of engagement with the tool, depending on the device type. The size of screen, and the presence/absence of functionalities can have an impact on the basic psychological need satisfactions. Kirjakovski[45] posits that the device type can cause changes in how a user engages with a digital tool. The devices chosen here are smartphone, laptop and desktop. Though the laptop and desktop versions of Teams are essentially identical, users' need satisfactions can vary because of dissimilarities in the device characteristics such as portability as well as in the context of use (e.g. desktop is often only used when working from office). Therefore, it was posited that:
H4: There are significant differences in the basic psychological need satisfactions of MS Teams users across devices.

Methodology

Sample

Data were collected from 120 users of Microsoft Teams, through self-administered questionnaires. A three-member review board at the authors' institution of affiliation issued ethical clearance for the study. The participants gave informed consent prior to data collection. Anonymity was ensured throughout the research process. The sample size of 120 was ascertained following precedents in extant literature. For example, Hakami et al. studied interface-level need satisfaction of a web-based tool among 53 users.[46] Also, Peters et al. used a sample size of 100 per technology to validate the METUX scales for measuring need satisfaction across four digital technologies.[19] The sample selected through convenience sampling consisted of 66 IT employees and 54 college teachers, based in Kerala, India. All the participants used Microsoft Teams as part of their profession, on a daily basis, especially for interacting with colleagues or students. Convenience sampling was

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employed owing to the need to access those IT employees and teachers who meet this criterion. Hakami et al. used this sampling approach in a METUX-based study.[46] The average participant was 37.39 years old, with 59.2% of the participants in the age group of 34-43 years. Female respondents comprised 54.2% of the sample, whereas males comprised 45.8%. 86.7% of the Teams users reported accessing the tool on a smartphone, while only 10.8% and 2.5% reported accessing it through laptop and desktop, respectively. Of all the participants, 28.3% used Teams for less than 1 hour per day, while 26.7% used it for more than 4 hours a day.

Instruments

The Technology-based Experience of Need Satisfaction (TENS) Scales were used for measuring interface need satisfaction (TENS- Interface Scale), task need satisfaction (TENS- Task Scale), and life need satisfaction (TENS- Life Scale). The TENS scales were developed and validated by Peters et al. as part of the METUX framework in 2018.[19] Each scale has subscales to measure the corresponding autonomy, competence, and relatedness satisfactions. The TENS-Task Scale measured need satisfaction while engaging in the most common Teams-supported task reported by participants: communication with colleagues (for IT employees) and with students (for college teachers). Each subscale comprised 5 items scored on a 5-point Likert scale, with 1 indicating "*Strongly disagree*" and 5 indicating "*Strongly agree*". All reverse-scored items were reverse-coded. Scale reliability was found to be acceptable for all scales. For TENS- Interface Scale, Cronbach's Alpha values were 0.78, 0.89, and 0.82 for autonomy, competence, and relatedness subscales, respectively. Similarly, Cronbach's Alpha values were 0.57, 0.91, and 0.84 for TENS-Task subscales and 0.89, 0.93, and 0.91 for TENS- Life subscales. The TENS-Task Autonomy subscale has a Cronbach's Alpha of 0.57. Although the value is low, the items are retained since it is consistent with previous research findings.[47-49].

Data Analysis

All analyses were done using SPSS 25.0 software and Microsoft Excel. Cronbach's Alpha was used to assess scale reliability. Mann-Whitney U Test for 2 independent samples and Friedman Test for related samples were employed to compare means. For post-hoc analysis of the Friedman test results, a Wilcoxon Signed Ranks Test was adopted. Kruskal-Wallis H test was executed to compare the means of 3 or more independent samples, and the post-hoc analysis was done using Mann-Whitney U Test with Bonferroni corrections to avoid Type I errors in multiple comparisons, along with rank biserial correlation effect size.

Results

This section is grouped into two sections. The first section, *Descriptive Statistics,* gives the mean, standard deviation, and normality test results for each variable in the study. The section also presents a summary of the sample characteristics. The second section, *Hypothesis Testing,* comprises the test results of each hypothesis in the study. The relevant non-parametric analysis results are presented there.

Table 1: Profile of the Sample Population

Characteristic	Group	Freq	Percent
Age	24 - 33 years	30	25.0
	34 - 43 years	71	59.2
	44 - 53 years	15	12.5
	54 - 63 years	2	1.7
	Above 64 years	2	1.7
Gender	Female	65	54.2
	Male	55	45.8
Profession	IT	66	55.0
	Teaching	54	45.0
Teams Usage	Less than 1 hour per day	34	28.3
	1-2 hours per day	21	17.5
	2-3 hours per day	20	16.7
	3-4 hours per day	13	10.8
	More than 4 hours per day	32	26.7
Platform	Smartphone	104	86.7
	Laptop	13	10.8
	Desktop	3	2.5

Note: Demographic and MS Teams usage characteristics of respondents.

Descriptive Statistics

Table 1 gives the descriptive analysis results for every construct in the study. The Shapiro-Wilk Test for normality showed that none of the variables follow a normal distribution, the results of which are also depicted in Table 2. Figure 1 presents the mean scores of autonomy, competence and relatedness satisfactions

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in interface, task and life spheres. Table 2 provides the sample profile.

Table 2: Descriptive Statistics and Normality

	Mean	SD	Shapiro-Wilk Statistic	p-value
IA	3.781	.753	.968	.006
IC	4.010	.798	.912	.000
IR	3.640	.830	.968	.006
TA	3.177	.756	.969	.007
TC	4.010	.904	.882	.000
TR	3.616	.901	.965	.003
LA	3.714	.956	.944	.000
LC	4.113	.815	.870	.000
LR	3.630	1.024	.935	.000

Note: Interface autonomy (IA), interface competence (IC), interface relatedness (IR), task autonomy (TA), task competence (TC), task relatedness (TR), life autonomy (LA), life competence (LC), life relatedness (LR).

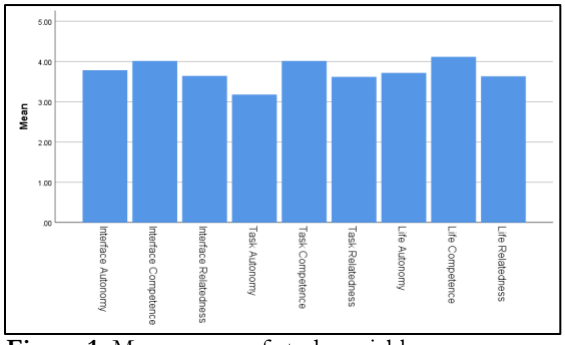
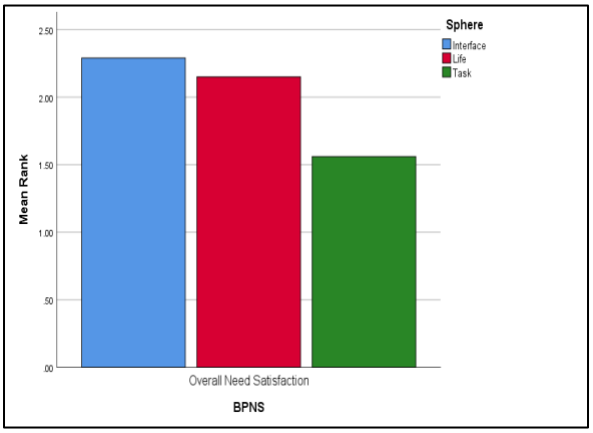


Figure 1: Mean scores of study variables

Hypothesis Testing

H1: There is a significant difference in the basic psychological need satisfaction across the interface, task and life spheres of MS Teams.

Overall need satisfactions differ significantly (see Table 3) across spheres, according to the Friedman Test (χ^2 (2)=37.17, p<0.001). The Wilcoxon Signed Ranks Test for post-hoc analysis found that overall task need satisfaction is significantly lower than that in interface (p<0.001) and life spheres (p<0.001). This implies users' needs are least supported while communicating through Teams (since communication is the task chosen for the study). The differences are represented by a bar chart with mean rank comparisons in Figure 2. The higher the mean rank, the higher the respondents' ratings of the specific need.



Note: BPNS stands for basic psychological need satisfaction.

Figure 2: Mean Rank Comparison of Overall Need Satisfaction across Spheres

H2: There are significant differences in the satisfaction of autonomy, competence, and relatedness needs within the interface, task, and life spheres of MS Teams.

Friedman Test found significant differences in need satisfaction within each sphere. The results supported hypothesis H2 (see Table 3). The results indicate a significant difference in need satisfactions in the interface sphere (χ^2(2)=25.23, p<0.001), task sphere (χ^2(2)=51.74, p<0.001), and life sphere (χ^2(2)=18.47, p<0.001). Wilcoxon Signed Ranks Test for post-hoc analysis showed that interface competence is significantly higher than interface autonomy and interface relatedness (p<0.001), task competence is significantly higher than task autonomy (p<0.001) as well as task relatedness (p<0.001), task relatedness is significantly higher than task autonomy (p<0.001), and that life competence is significantly greater than life autonomy and life relatedness (p<0.001).

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Table 3: Friedman Test and Wilcoxon Signed Ranks Post-hoc Test

Variable	Mean Rank	Friedman Test ($\chi 2$)	p-value	Wilcoxon Signed Ranks Test	p-value
INS	2.29	37.17	**<0.001**	INS vs. TNS	**<0.001**
TNS	1.56			TNS vs. LNS	**<0.001**
LNS	2.15			LNS vs. INS	0.52
IA	1.93	25.23	**<0.001**	IA vs. IC	**<0.001**
IC	2.33			IC vs. IR	**<0.001**
IR	1.74			IR vs. IA	0.11
TA	1.58	51.74	**<0.001**	TA vs. TC	**<0.001**
TC	2.45			TC vs. TR	**<0.001**
TR	1.97			TR vs. TA	**<0.001**
LA	1.84	18.47	**<0.001**	LA vs. LC	**<0.001**
LC	2.29			LC vs. LR	**<0.001**
LR	1.87			LR vs. LA	0.44

Note: Interface need satisfaction (INS), task need satisfaction (TNS), life need satisfaction (LNS), interface autonomy (IA), interface competence (IC), interface relatedness (IR), task autonomy (TA), task competence (TC), task relatedness (TR), life autonomy (LA), life competence (LC), life relatedness (LR). Significant p-values are shown in bold.

Figure 3 below depicts the within-sphere need comparisons in the form of mean rank comparisons. The higher mean rank within each sphere corresponds to the need that respondents rated higher on average.

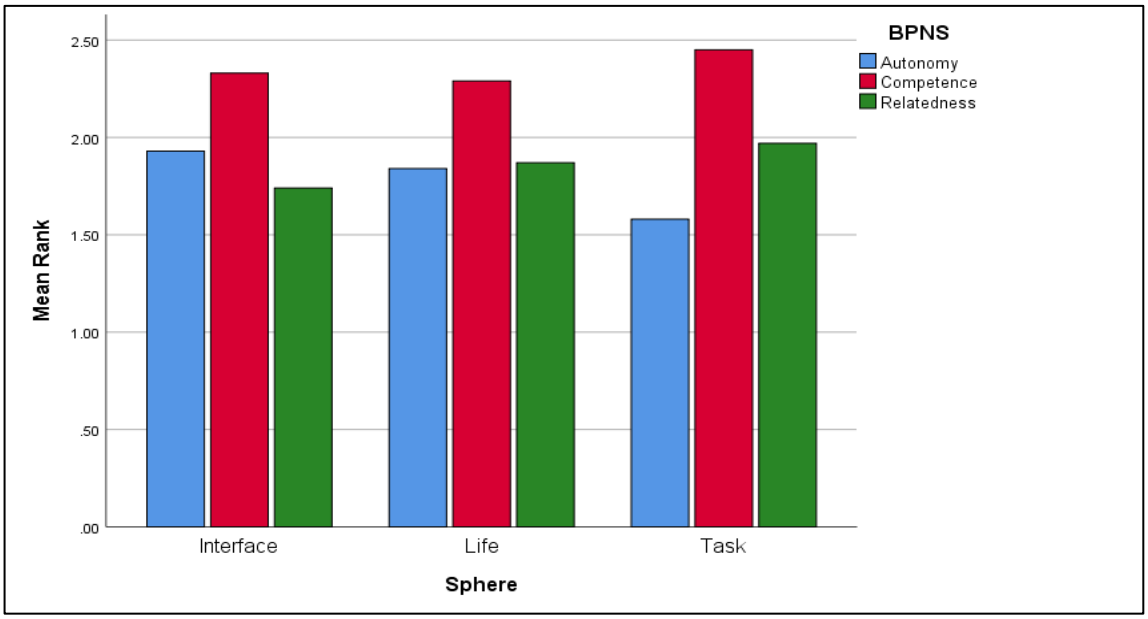

Figure 3: Mean Rank Comparison of Need Satisfaction within Spheres

H3: There are significant differences in basic psychological need satisfactions between IT employees and teachers using MS Teams.

IT employees and teachers are expected to have differing perceptions of need satisfaction, given the distinct ICT demands of each profession. A Mann Whitney Test was conducted to test this (see Table 4). IT employees reported significantly higher overall interface need satisfaction (U=1268.5, p=0.007), overall task need satisfaction (U=1294, p=0.01), overall life need satisfaction (U=1322, p=0.015), interface competence (U=1258, p=0.005), interface relatedness (U=1332, p=0.017), task competence (U=1169, p=0.001), and life relatedness (U=1051.5, p<0.001) than teachers. The findings corroborate the proposed hypothesis H3. These findings particularly point towards teachers'

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lower sense of connection with students from Teams use, which is a crucial aspect of the profession. This can lower their morale and fulfillment at work, which may impact their general workplace interactions negatively.

Table 4: Mann Whitney U Test

	Profession	**Mean Rank**	**Mann Whitney U**	**p-value**
Interface Need Satisfaction	IT	68.28	1268.5	**0.007**
	Teaching	50.99		
Interface Autonomy	IT	63.88	1559.00	0.238
	Teaching	56.37		
Interface Competence	IT	68.44	1258.00	**0.005**
	Teaching	50.80		
Interface Relatedness	IT	67.32	1332.00	**0.017**
	Teaching	52.17		
Task Need Satisfaction	IT	67.89	1294.00	**0.010**
	Teaching	51.46		
Task Autonomy	IT	64.02	1550.00	0.217
	Teaching	56.20		
Task Competence	IT	69.79	1169.00	**0.001**
	Teaching	49.15		
Task Relatedness	IT	63.59	1578.00	0.279
	Teaching	56.72		
Life Need Satisfaction	IT	67.47	1322.00	**0.015**
	Teaching	51.98		
Life Autonomy	IT	62.66	1639.50	0.449
	Teaching	57.86		
Life Competence	IT	59.80	1736.00	0.80
	Teaching	61.35		
Life Relatedness	IT	71.57	1051.500	**<0.001**
	Teaching	46.97		

Note: A comparison of need satisfactions between IT Professionals and Teachers. Significant p-values are bolded.

Figure 4 below shows the variables with significant differences between the professions in a bar chart. It depicts the differences in mean ranks. The group with higher mean rank rated the corresponding variable higher.

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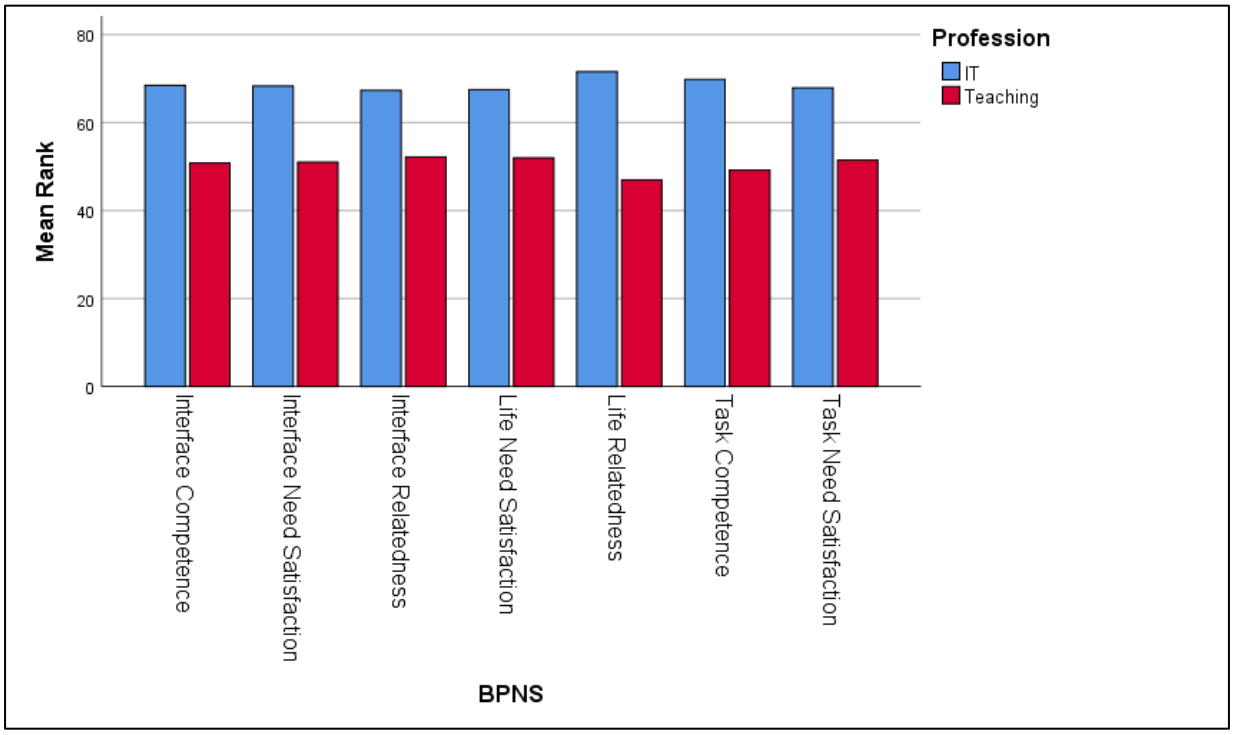

Note: A comparison of need satisfactions between IT Professionals and Teachers. Significant p-values are bolded.
Figure 4: Mean Rank Comparison of Need Satisfaction between IT Employees and Teachers

H4: There are significant differences in the basic psychological need satisfactions of MS Teams users across devices.

A Kruskal-Wallis H Test was performed to assess differences in need satisfaction among smartphone, laptop, and desktop users of MS Teams (refer to Table 5 for the significant results). The mean ranks of groups are compared to identify significant differences. The group with the larger mean rank is the one with the higher variable score. There is a significant difference in overall interface need satisfaction ($H(2)=8.65$, $p=0.013$), interface autonomy (($H(2)=6.26$, $p=0.044$), interface competence ($H(2)=8.98$, $p=0.011$), task competence ($H(2)=7.44$, $p=0.024$), and life need satisfaction ($H(2)=6.17$, $p=0.046$). Hypothesis H4 is validated. For post-hoc analysis, pairwise comparisons using Mann Whitney Test were performed, followed by Bonferroni correction that adjusted the significance level to 0.0167 (i.e. 0.05/3). This was done to reduce the risk of falsely claiming there are significant differences. The results showed that the differences between smartphone and laptop users drove the significant overall differences. The largest difference was observed for interface competence, closely followed by overall interface need satisfaction. After applying the Bonferroni correction, it was found that smartphone users scored significantly higher than laptop users only for overall interface need satisfaction ($U=348.5$, $p=0.004$) and interface competence ($U=336$, $p=0.003$). This means the differences in these two variables are unlikely to be false and mostly represent real patterns in the population of Teams users.

To evaluate the significance of these differences in the real world, rank biserial correlation effect sizes for the Mann Whitney U (smartphone vs. laptop) were calculated using the Wendt formula.[50] The effect sizes were classified as small (0.1), medium (0.3), and large (0.5),[51] to provide further insights (see Table 6). The effect sizes (r_{rb}) were found to be 0.48 (approximately 0.5 and hence, large effect) for interface need satisfaction and 0.503 (large effect) for interface competence. This means the differences between smartphone users and laptop users for these variables have both practical as well as statistical significance. For those variables with significant overall differences and nonsignificant pair-wise differences, the effect sizes were medium: $r_{rb} = 0.404$ (interface autonomy), $r_{rb} = 0.393$ (task competence), and $r_{rb} = 0.392$ (life need satisfaction). This suggests that these differences can be relevant in the real world and signify the need for further research with more even group sizes.[52]

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Table 5: Kruskal-Wallis H Test and Mann-Whitney U post-hoc test

	Platform	Mean Rank	p-value	Mann Whitney U Test	p-value
Interface Autonomy	Smartphone	62.76	0.044	Smartphone vs. Laptop	*0.017*
	Laptop	38.65		Laptop vs. Desktop	0.154
	Desktop	76.67		Desktop vs. Smartphone	0.47
Interface Competence	Smartphone	63.74	0.011	Smartphone vs. Laptop	**0.003**
	Laptop	33.42		Laptop vs. Desktop	0.104
	Desktop	65.67		Desktop vs. Smartphone	0.95
Interface Need Satisfaction	Smartphone	63.32	0.013	Smartphone vs. Laptop	**0.004**
	Laptop	34.35		Laptop vs. Desktop	0.092
	Desktop	76.17		Desktop vs. Smartphone	0.51
Task Competence	Smartphone	62.42	0.024	Smartphone vs. Laptop	*0.018*
	Laptop	39.04		Laptop vs. Desktop	0.065
	Desktop	86.83		Desktop vs. Smartphone	0.199
Life Need Satisfaction	Smartphone	62.63	0.046	Smartphone vs. Laptop	*0.021*
	Laptop	39.15		Laptop vs. Desktop	0.092
	Desktop	79.33		Desktop vs. Smartphone	0.406

Note: Significant overall differences are reported. For pairwise differences, p-values≤0.05 are italicized and p-values≤ 0.0167 (Bonferroni-adjusted significance level) are bolded.

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Table 6: Effect sizes

	Mann Whitney U (Smartphone vs. Laptop)	Rank-biserial correlation effect size (r_{rb})
Interface Autonomy	402.500	0.404
Interface Competence	336.000	0.503
Interface Need Satisfaction	348.500	0.484
Task Competence	410.500	0.393
Life Need Satisfaction	411.000	0.392

Note: The rank-biserial correlation effect sizes for smartphone vs. laptop Mann-Whitney U. Effect sizes of pairwise differences corresponding to significant overall differences are reported in the table.

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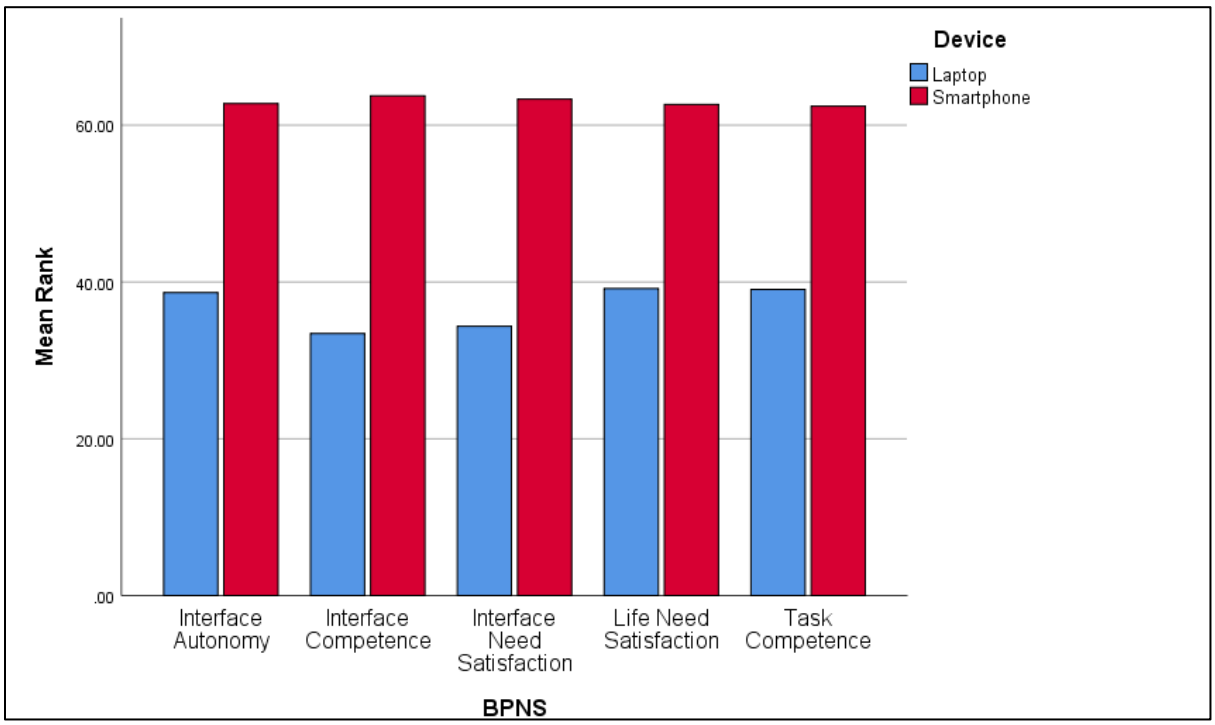
The bar chart in Figure 5 demonstrates the significant pairwise differences in need satisfaction between smartphone and laptop users in terms of mean ranks.



Note: Only variables and devices with statistically significant differences are displayed. BPNS stands for basic psychological need satisfaction.

Figure 5: Mean Rank Comparison of Need Satisfaction between Smartphone and Laptop Users

Discussion

The present study explores the basic psychological need satisfaction of Microsoft Teams users. Overall, the study provides comparisons in need satisfaction based on the sphere of user experience as well as user characteristics. The study finds that the need satisfaction during the execution of a Teams enabled task is significantly lower than that during direct interaction with the Teams interface. It is also less than the need satisfaction felt in personal life because of using Teams. This suggests that users experience less basic psychological need satisfaction while communicating with colleagues/students through Teams. In other words, they experience lower basic psychological need satisfaction in the task sphere. Digital technology design must focus on supporting user's autonomy, competence and relatedness needs while they carry out the relevant work-related tasks apart from focusing on their interface experience. This finding is consistent with the METUX model,[19] suggesting that user experience and need satisfaction vary across spheres. In each sphere, autonomy and relatedness satisfaction levels were lower than competence. This implies there is a need to offer more options and controls that will give greater freedom while interacting with Teams as well as while performing work-related tasks supported by Teams and also avoid invasion of users' non-working hours. There is also scope for adding features/functionalities that support teachers and IT employees in having authentic connections (with students and colleagues) at work and in life.

While comparing professions, it is expected that IT employees and teachers have varying demands and challenges at work. Teaching likely involves greater emotional labour that requires teachers to invest emotionally in student relationships. This is hard to implement in a virtual environment. Teachers also have the added responsibility of keeping students engaged in virtual classes. In this study, teachers were found to have lower overall need satisfaction in all three spheres. At the interface level, teachers experienced lower competence

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and relatedness satisfaction, attributable to less technical know-how, little training on the tool, and few opportunities to form close relationships with students virtually. Previous research is in agreement. Trust & Whallen[53] find that teachers generally lacked preparedness for and exposure to remote teaching until the coronavirus outbreak, which is suggestive of lower competence with digital tools, also corroborated by other authors.[54,55] Further supporting this, in the task sphere, teachers reported lower competence satisfaction.

This suggests teachers find communicating via Teams relatively difficult, likely due to insufficient features, connectivity issues, and challenges in engaging students online along with managing the app. Trust & Whallen[53] also posit effective communication as a critical pain point in virtual classrooms. As regards the life sphere, teachers felt a lower sense of relatedness satisfaction. This may be due to the need for deeper connections between teachers and students,[43] unlike relationships in IT sector. Further, teachers also have fewer opportunities for colleague interactions through Teams, whereas IT employees are almost constantly connected through chat. Teachers can benefit if interactive tutorials are embedded in the platform for new or possibly complex features. To sustain student engagement, Teams can prompt teachers to use available team-building features from time-to-time. Regular solicitation and incorporation of feedback, through the app, from teachers and students will be useful. A design that caters to the specific needs of each profession can make Teams a preferred workplace tool that supports employee well-being across sectors.

The study also sought to find if the platform/device on which Teams is accessed has any influence on the need satisfaction experienced by users. The results were affirmative. However, significant differences were found only in the interface sphere and only between smartphone users and laptop users. Smartphone users reported higher overall need satisfaction and competence satisfaction. Smartphone vs. laptop comparisons in other spheres did not assume statistical significance after Bonferroni correction. Nevertheless, the effect sizes suggest the practical possibility of smartphone users experiencing higher interface autonomy, task competence and overall life need satisfaction than their laptop counterparts, which can be validated through further research. These findings align with studies that have established that mobile applications keep users relatively more engaged[56] and that users prefer mobile platforms.[57,58] Extant work also claims that smartphones outperform laptops in supporting users' social connections .[59] Teams can cash in on the preference by investing more in the mobile app user experience. Designing for gesture-based interactions that permit users to engage with the digital tool through body movements can further enrich the mobile app experience.[60] Making the laptop version (essentially the same as the desktop version of the app) easier to navigate and use, and providing more functionalities to limit intrusion of personal time can also prove beneficial.

Overall, the study highlights the need for workplace technology like Teams to focus beyond productivity or engagement. Tool designers must aim to meet users' basic psychological needs, especially during task execution. Features that nurture autonomy, competence and relatedness must be a priority. The findings also give a cue for organizations to choose ICT that aligns with the specific psychological demands of each profession. Training must be offered to boost employees' competence with the technology and to promote its healthy use.

Conclusion

Integrating well-being into technology design has become a core priority, owing to the all-pervasiveness of technology, and its negative psychological effects on users. Evaluating workplace technology like MS Teams for its well-being impact is an important step as it is an integral part of an individual's work and hence, overall well-being. Drawing on Self Determination Theory and the METUX model, the current study sought to compare the basic psychological need satisfaction of MS Teams users across three spheres of user experience (interface, task, and life), two different professional contexts (IT employees vs. teachers), and three devices (smartphone, laptop, and desktop). The study also examined differences among autonomy, competence and relatedness satisfaction levels within each sphere. Competence levels were consistently higher across spheres, highlighting its centrality in users' overall experience with Teams. The results revealed significant differences in many aspects. The findings highlight the distinctness of user experience at various levels of user interaction, among different professionals, and across

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device types while engaging with the same digital tool. A workplace technology design that accounts for those differences will be supportive of employee well-being. The present study offers relevant insights into the design of Teams to better suit each user group's specific needs, thus making it more inclusive and supportive of well-being.

The current investigation has certain limitations. First, the device groups have uneven sample sizes, which may restrict the generalizability of device-based differences. Second, the study focuses on only two professions, leading to the exclusion of other profession-specific user experiences with MS Teams. Third, convenience sampling is employed, which may affect the generalizability of the findings. Subsequent research may include comparable subgroup sizes, and more professions. There is also scope for comparing the web version of Teams with its desktop/mobile app version and for comparing Teams with other applications. Future studies can also explore the influence of factors such as age, gender and daily usage time on users' need satisfaction. Longitudinal analysis and focus on individual components of the Teams interface will be useful as well.

Conflict of interest: The authors declare that there is no conflict of interest regarding the publication of this paper.

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Ethical consideration: Participation was voluntary, after obtaining respondents' consent. The purpose of the study was explained to each participant. All data collected were kept anonymous and confidential. The data were used solely for academic purposes.

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