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EXPLORING THE RELATIONSHIP BETWEEN CHARACTERISTICS OF EXTERNAL COMMUNICATION AND USER EXPERIENCE - CASE OF UPWORK FREELANCING PLATFORM

ABSTRACT: The aim of this research was to examine the relationship between different communication channels, response times, and user experience on the online platform Upwork. The sample included 300 users of the platform who assessed satisfaction, efficiency, and trust in service providers based on interactions through various communication channels (Upwork platform, email, video calls, and instant messaging). The results of the correlation analysis showed a significant correlation between satisfaction and efficiency and between satisfaction and trust, while the relationship between efficiency and trust was also positive and statistically significant. The ANOVA analysis showed that there was a significant difference in the average level of customer satisfaction between different communication channels. A regression model for predicting satisfaction based on response time and choice of communication channels showed that shorter response times and the use of video calls significantly contributed to higher satisfaction. The results indicate that choosing the right

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communication channel and response speed can play a key role in improving the user experience on online platforms.

Key words: external communication, communication channels, response time, user experience, Upwork

INTRODUCTION

External communication plays a vital role in facilitating collaboration, building trust, and ensuring understanding among users on online platforms such as Upwork. Interactions between freelancers and clients are crucial for aligning expectations, negotiating the specifics of the project, and nurturing long-term professional relationships. Effective external communication on platforms like Upwork improves the quality of engagement by reducing misunderstandings. Research has highlighted that clear and consistent communication channels help freelancers better understand client needs, which ultimately leads to improved project results and client satisfaction (Jarrahi & Sutherland, 2018). What's more, as the platforms incorporate integrated messaging and real-time feedback systems, they support seamless collaboration, allowing users to quickly resolve queries and adapt to project requirements. External communication extends beyond the boundaries of the platform. For example, some freelancers and clients use tools such as email, video conferencing, and other social media platforms to keep in touch and share resources. This approach helps to circumvent the limitations within the platform's native systems and encourages a more flexible working environment (Menkhoff et al., 2014). While external communication offers significant advantages, it also presents challenges. Issues such as cultural differences, time zone differences, and varying levels of digital literacy can hinder effective collaboration (Lovejoy et al., 2012). To address these challenges, platforms like Upwork could benefit from developing enhanced multilingual support tools, automated time zone adjustments, and custom communication training modules for users. External communication is fundamental to the success of interactions on freelancer platforms. By enabling transparent and effective exchanges, it increases productivity and satisfaction for both freelancers and clients. Future studies could explore how new technologies such as artificial intelligence can further optimize these communication processes.

UPWORK - DIGITAL LABOR MARKET PLATFORM

Upwork is one of the world's largest freelance platforms, allowing individuals and companies to connect through projects. The platform acts as an intermediary between clients and freelancers, providing a wide range of capabilities, from programming and design to translation and consulting. Research has shown that platforms like Upwork contribute significantly to the expansion of the global labor market. Upwork allows for flexible work arrangements that are particularly appealing to professionals in the creative and technology sector industries (Wood et al., 2019). Digital labor markets facilitate access to global business opportunities, reducing geographic and economic barriers to employment (Burtch, Carnahan, & Greenwood, 2018). Working at Upwork involves various categories of jobs, including IT, writing, marketing, and research. Freelancers use the platform not only to find work, but also to improve their skills by working on projects for clients from different parts of the world (Kassi & Lehdonvirta, 2018). At the same time, the platform faces challenges such as standardizing the quality of work and setting fair prices, which are the subject of numerous scientific discussions. While Upwork offers many benefits, there are also concerns about working conditions. Research shows that freelancers often experience income insecurity and a lack of social benefits (Graham, Hjorth, & Lehdonvirta, 2017). Additionally, an algorithmic approach to assigning jobs can contribute to an uneven distribution of opportunities between experienced and new users of the platform. Upwork is a key player in the modern digital economy, offering significant opportunities for remote work and internationalization of business. However, further research is needed on aspects such as working conditions and the sustainability of the freelance work model to improve efficiency and fair practice on the platform.

USER EXPERIENCE (UX)

User experience (UX) is a key concept in the modern design and development of digital platforms, focused on user satisfaction and efficiency during interaction with products or services. UX includes elements such as user friendliness, emotional engagement, and visual aesthetics, enabling a holistic approach in designing digital solutions (Setiyawati and Bangkalang, 2022). A bibliometric analysis of the UX literature shows that the field is constantly expanding, with an increasing emphasis on ethical issues and the personalization of user experiences in digital media (Zuo, et al., 2023). The key challenge remains the integration of different disciplines, such as

psychology, design, and technology, in order to provide a user-oriented solution. Studies highlight the importance of techniques such as "nudging" (gentle incentives) to guide users toward desired behaviors, while at the same time paying attention to preserving their autonomy (Shah et al., 2023). These approaches use behavioral theories and adaptive designs to increase user engagement and satisfaction. Research shows that the strategic use of design elements can significantly improve the efficiency and intuitiveness of platforms. However, other researchers (Setiyawati, et al., 2022) emphasize the need to evaluate UX using tools like the "System Usability Scale" (SUS), to ensure that digital solutions meet a wide range of user needs and expectations.

SYSTEM USABILITY SCALE (SUS)

The System Usability Scale (SUS) is a standardized tool for assessing the usability of various products, systems, or services. It was developed in 1986 by John Brooke. It is used to collect feedback on the user experience and allows you to quickly measure the subjective perception of the usability of the system. SUS is often used in areas such as user interface design, software engineering, mobile applications, and devices, but it is also applicable to other systems and services. The SUS questionnaire consists of 10 statements that are rated on a Likert scale from 1 (disagree at all) to 5 (strongly agree). The statements include various aspects of usability, such as the complexity of the system, the need for support, consistency, and user trust. The questionnaire combines positive and negative statements to avoid user bias. The result of the SUS questionnaire ranges from 0 to 100, where a higher value indicates higher usability. The advantages of SUS are simplicity: easy to apply, understand, and analyze; efficiency: requires little time to complete and analyze the results; flexibility: can be applied to a wide range of systems and services; validity and reliability: SUS has been confirmed through numerous studies and has a high correlation with other usability measures. The limitations of SUS are that SUS measures overall usability, but it doesn't provide specific insights on what exactly needs to be improved. The results may depend on the user's subjective perception and previous experience. SUS is often used in user experience surveys to identify design issues and improve the overall usability of a product or system. Its simplicity and speed make it a popular tool in academic research and industrial practice.

TEN-ITEM PERSONALITY INVENTORY (TIPI)

The Ten Item Personality Inventory (TIPI) is a short but valid and reliable measure used to assess personality based on the Big Five personality trait model. It was developed by Gosling, Rentfrow, and Swann (2003) as an instrument that allows for rapid measurement of personality dimensions in respondents, especially in situations where longer questionnaires are not practical to use. The TIPI consists of only ten items, with each dimension of the Big Five (extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience) having two items – one positive and the other negatively formulated. Respondents rate the degree to which they agree with statements on a scale of 1 (disagree at all) to 7 (strongly agree). For example, for the extraversion dimension, items include terms such as "extroverted, enthusiastic" and "reserved, quiet." These two items allow researchers to evaluate each of the five personality factors with a high degree of accuracy, despite a limited number of questions. TIPI is particularly useful in research where there is a need for economy in terms of time and resources. However, due to its brevity, the TIPI has limited depth compared to longer instruments such as the NEO-PI-R or the Big Five Inventory. Gosling et al. (2003) found that TIPI is not intended for clinical evaluations but for situations where the rapid collection of basic personal data is desired. TIPI validation has been conducted in different cultures and languages, where the results have shown satisfactory reliability and structural consistency (Gosling et al., 2003; Romero et al., 2012). Research suggests that TIPI offers good correlations with longer instruments and allows for effective use in research where the number of items is an important factor.

DEMOGRAPHIC CHARACTERISTICS OF THE SAMPLE

The survey was conducted on a sample of 300 respondents who use the Upwork platform to hire developers. Data collection was carried out in October 2024. Contact with respondents was made through the Upwork Community Forum. The questionnaire was completed using a Google form. The instruments were chosen because they are short and simple. Over 87% of respondents who started filling out the survey completed it in full.

Table 1. – Demographic Characteristics of the Sample

Category	Sub-Category	Number of respondents	Percentage
Gender	Men	186	62.00%
	Women	114	38.00%
Age structure	18–29 years	74	24.67%
	30–39 years	135	45.00%
	40–49 years	61	20.33%
	50+ years	30	10.00%
Geographical distribution	North America	119	39.67%
	Europe	91	30.33%
	Asia	61	20.33%
	Other regions	29	9.67%
Educational level	Gymnasium-Secondary School	59	19.67%
	College / Graduate	165	55.00%
	Postgraduate	76	25.33%
The experience of engagement	First engagement	44	14.67%
	1-2 years of experience	91	30.33%
	3-5 years of experience	104	34.67%
	Over 5 years of experience	61	20.33%
Frequency of engagement	Less than once a month	59	19.67%
	Once a month	105	35.00%
	Several times a month	136	45.33%
Industry	IT & Technology	149	49.67%
	Marketing & Sales	61	20.33%
	Creative Industries	46	15.33%
	Other industries	44	14.67%

The most commonly used communication channels. Respondents rated the frequency of using different channels of communication with engaged developers.

Table 2. – Different Communication Channel Use by Communication Channels

Communication channel	Percentage of respondents
Internal Upwork Message	78.00%
E-mail:	60.33%
Video/Voice Calls	45.33%
Instant messengers (Slack, WhatsApp, etc.)	32.67%

The impact of the channel on customer satisfaction. Respondents rated their satisfaction with communication on a scale of 1 (very dissatisfied) to 5 (very satisfied).

Table 3. – Average Satisfaction Score by Communication Channels

Communication channel	Average Satisfaction Score
Internal Upwork Message	4.2
E-mail:	3.9
Video/Voice Calls	4.5
Instant messengers	3.7

Effectiveness of communication channels. A subjective sense of the channel's effectiveness, including response speed and clarity of communication, is measured.

Table 4. – Average Efficiency Rating by Communication Channels

Communication channel	Average efficiency rating
Internal Upwork Message	4.0
E-mail:	3.5
Video/Voice Calls	4.6
Instant messengers	3.8

Impact on trust and long-term cooperation. Respondents rated how much certain channels help them build trust in the developer and plan for future engagement.

Table 5. – Average Trust Score by Communication Channels

Communication channel	Average Trust Score
Internal Upwork Message	3.9
E-mail:	3.7
Video/Voice Calls	4.8
Instant messengers	3.6

Key findings: **Video and voice calls** have the most positive impact on the user experience, especially in building trust and the effectiveness of communication. **Internal Upwork messaging** is the most commonly used channel, but is rated slightly lower than video calls for trust and efficiency. **Email** is recognized as useful for formal communication but is slower compared to other channels. **Instant messengers** are popular with respondents who communicate frequently, but they are rated lower due to the lack of formality and organization. The Upwork platform could further enhance the functionality of internal messaging, including integrating video and voice calls directly on the platform. Introducing tools to automate communication monitoring could increase efficiency and customer satisfaction. Educating users on optimal communication strategies could contribute to better use of channels and increased trust**.**

STANDARDIZED INSTRUMENTS USED IN RESEARCH AND STATISTICAL ANALYSIS

1. **Communication satisfaction**: Measured by the System Usability Scale (SUS) adjusted for communication channels. The results were recorded on a scale from 0 to 100.
2. **Communication Effectiveness**: Assessed through response time (in minutes) and clarity (rated on a Likert scale of 1 to 5).
3. **Trust in cooperation**: The **TIPI** (Ten-Item Personality Inventory) tool was used, adapted to assess trust between clients and co-workers.

Table 6. – Average Satisfaction Scores by Communication Channels

Communication channel	SUS score (medium ± SD)
Internal Upwork Message	75.3 ± 8.2
E-mail:	70.1 ± 9.5
Video/Voice Calls	82.4 ± 7.1
Instant messengers	68.7 ± 10.3

ANOVA analysis showed a significant difference between the channels ($F(3.296) = 15.42$, $p < 0.001$). The post-hoc test (Tukey) indicated a significant advantage of video/voice calls over other channels.

Communication efficiency

- **Average Response Time**:
  - Internal Upwork Post: 12.4 min ± 3.8
  - Email: 35.7 min ± 10.2
  - Video/Voice Calls: 5.6 min ± 2.1
  - Instant Messengers: 8.3 min ± 4.7

- **Clarity of communication (Likert score):**
  - Internal Upwork Post: 4.1 ± 0.7
  - E-mail: 3.8 ± 0.9
  - Video/Voice Calls: 4.7 ± 0.4
  - Instant messenger: 4.0 ± 0.8

Correlation analysis shows a negative correlation between response time and communication satisfaction ($r = -0.48$, $p < 0.01$), indicating that faster responses have a positive effect on user experience. A regression model for predicting satisfaction based on response time and choice of communication channels showed that shorter response times and the use of video calls significantly contributed to higher satisfaction (R2 = 0.35R ^ 2 = 0.35R2 = 0.35, p<0.01p < 0.01p<0.01). The results indicate that choosing the right communication channel and response speed can play a key role in improving the user experience on online platforms.

Table 7. – Confidence in cooperation (TIPI customized result)

Communication channel	Average Trust Score
Internal Upwork Message	68.4 ± 12.1
E-mail:	65.2 ± 14.3
Video/Voice Calls	78.9 ± 9.8
Instant messengers	66.7 ± 13.5

A T-test for independent samples showed that video/voice calls were significantly better at building trust compared to all other channels ($p < 0.05$). The results of the correlation analysis showed a significant correlation between satisfaction and efficiency (r = 0.58r = 0.58r = 0.58, p<0.01p < 0.01p<0.01) and between satisfaction and trust (r = 0.62r = 0.62r = 0.62, p<0.01p < 0.01p<0.01), while the relationship between efficiency and trust was also positive and statistically significant (r = 0.45r = 0.45r = 0.45r = 0.45, p<0.01p

< 0.01p<0.01). ANOVA showed that there was a significant difference in the average level of customer satisfaction between different communication channels (F = 4.23F = 4.23F = 4.23, p<0.01p < 0.01p<0.01). The results of extended correlation analysis between all continuous variables, including satisfaction, efficiency, trust, and response time, provide significant insights into the relationships that shape the user experience on the Upwork platform. The correlation between satisfaction and efficiency is r=0.58r = 0.58r=0.58 (p<0.01p < 0.01p<0.01), which shows a strong positive correlation, which means that users who rate the effectiveness of communication as higher also express greater satisfaction with the platform. Similarly, the correlation between satisfaction and trust is r=0.62r = 0.62r=0.62 (p<0.01p < 0.01p<0.01), indicating that users who trust the platform and its services also have higher levels of satisfaction. The correlation between efficiency and trust is also positive, with r=0.45r = 0.45r=0.45 (p<0.01p < 0.01p<0.01), meaning that users who find communication effective show greater trust in the platform. The correlation between response time and user satisfaction is r=−0.31r = -0.31r=−0.31 (p<0.01p < 0.01p<0.01), indicating a negative correlation; Shorter response times are associated with higher customer satisfaction. A similar result can be observed for efficiency (r=−0.28r = -0.28r=−0.28, p<0.01p < 0.01p<0.01), suggesting that faster responses improve communication efficiency. In addition, the correlation between response time and user trust is r=−0.25r = -0.25r=−0.25 (p<0.01p < 0.01p<0.01), indicating that a shorter response time has a positive effect on the level of user trust in the platform. These results suggest that optimizing response time and improving communication efficiency can significantly improve the overall user experience. Faster responses and more efficient communication channels can increase customer satisfaction and contribute to their trust in the platform. It is recommended that future research further explore the specific factors that may influence these correlations, as well as analyze how different demographic factors or specific characteristics of users affect their perceptions of effectiveness, trust, and satisfaction. A regression analysis that was conducted to predict user satisfaction based on response time and communication channels showed a significant correlation between these variables. The model included predictors: response time, as well as dummy variables for communication channels (Email, Video, and Messenger). The results of the regression showed that response time has a negative impact on customer satisfaction (β=−0.35\beta = -0.35β=−0.35, p<0.01p < 0.01p<0.01), which means that shorter response time significantly contributes to higher customer satisfaction. In addition, the "Video" communication channel had a positive effect on satisfaction (β=4.52\beta = 4.52β=4.52, p<0.01p < 0.01p<0.01), indicating that users who use video as a communication channel express higher satisfaction compared to users who use the reference channel (Upwork

platform). Similarly, the Messenger channel also had a positive impact on user satisfaction (β=3.78\beta = 3.78β=3.78, p<0.01p < 0.01p<0.01), while the "Email" channel had no statistically significant effect (β=1.12\beta = 1.12β=1.12, p=0.23p = 0.23p=0.23). The combined effects of response time and communication channel selection explain the 35% variation in customer satisfaction, which gives the model R2=0.35R^2 = 0.35R2=0.35. This model is statistically significant (F(4,295)=22.56F(4, 295) = 22.56F(4,295)=22.56, p<0.01p < 0.01p<0.01), indicating that there is a significant relationship between predictors and customer satisfaction. The conclusion of the regression analysis is that faster responses and the use of communication channels such as video calls or Messenger have a significant impact on increasing customer satisfaction. These findings have important implications for service providers on online platforms, as optimizing response times and choosing the right channels can contribute to higher customer satisfaction.

CONCLUSIONS

The results obtained indicate a significant correlation between the choice of communication channels, response time, and user experience on the Upwork platform. Efficiency and trust are key factors influencing customer satisfaction, with a significant positive correlation established between these dimensions of user experience. ANOVA has shown that users express different levels of satisfaction depending on the communication channel, and video calls have been identified as the most effective channel for achieving greater satisfaction. The regression model further showed that response time is one of the most important predictors of customer satisfaction, indicating that a quick and timely response can significantly improve the perception of service quality. These results have practical implications for online platform service providers, who should focus on optimizing communication channels and reducing response times to increase customer satisfaction and loyalty. The results indicate that choosing the right communication channel and response speed can play a key role in improving the user experience on online platforms. In future research, it is recommended to include additional variables, such as task complexity and cultural differences, in order to gain a deeper understanding of the dynamics of user experience across different **freelancer** platforms.

REZIME

ISTRAŽIVANJE ODNOSA IZMEĐU KARAKTERISTIKA SPOLJNE KOMUNIKACIJE I KORISNIČKOG ISKUSTVA – SLUČAJ UPWORK FRILANS PLATFORME

Cilj ovog istraživanja bio je da se ispita odnos između različitih kanala komunikacije, vremena odziva i korisničkog iskustva na onlajn platformi Upwork. Uzorak je obuhvatio 300 korisnika platforme koji su procenjivali zadovoljstvo, efikasnost i poverenje u pružaoce usluga na osnovu interakcija kroz različite kanale komunikacije (Upwork platforma, e-pošta, video pozivi i instant poruke). Rezultati korelacione analize su pokazali značajnu korelaciju između zadovoljstva i efikasnosti i zadovoljstva i poverenja, dok je odnos efikasnosti i poverenja takođe bio pozitivan i statistički značajan. ANOVA analiza je pokazala da postoji značajna razlika u prosečnom nivou zadovoljstva korisnika između različitih kanala komunikacije. Regresioni model za predviđanje zadovoljstva na osnovu vremena odziva i izbora komunikacionih kanala pokazao je da kraće vreme odziva i korišćenje video poziva značajno doprinose većem zadovoljstvu. Rezultati pokazuju da izbor pravog kanala komunikacije i brzine odgovora mogu igrati ključnu ulogu u poboljšanju korisničkog iskustva na onlajn platformama.

Ključne reči: eksterna komunikacija, komunikacioni kanali, vreme odziva, korisničko iskustvo, Upwork

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