



## **STUDY ON DYNAMICS IN E-COMMERCE AND ICT IMPACT ON WELL-BEING: A COMPARATIVE STUDY**

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### **Abstract**

*This research delves into the relationship between access to Information and Communication Technology (ICT) and individuals' subjective well-being. As ICT becomes increasingly integrated into modern life, it is essential to understand its potential impact on well-being. Using data from 600 individuals, this study assesses whether greater access to ICT correlates positively with higher levels of subjective well-being. Descriptive statistics reveal the varying levels of ICT access and subjective well-being, while correlation analysis evaluates the strength and significance of the relationship. The findings suggest that, in the studied dataset, there is no statistically significant correlation between ICT access and subjective well-being. This research contributes to the ongoing discussion about the influence of technology on individual well-being.*

*Keywords: Information and Communication Technology, ICT Access, Subjective Well-Being, Technology Impact, Well-Being Assessment, Digital Society*

### **INTRODUCTION**

Innovations in technology and the broad use of networking have been the primary forces behind the tremendous changes seen by the corporate world in the last several years. Businesses throughout the world now communicate, operate, and compete differently as a result of these developments. This shift could not have happened without the contributions of technological progress. With the advent of AI, the Internet of Things, and ubiquitous high-speed internet, companies have been able to automate processes, analyze massive information, and make better, faster choices by using technology. Because of this, productivity, precision, and competitiveness have all gone increased. The internet and other forms of digital communication have made networking an essential part of modern company processes. It has built a digital network that bridges the gap between companies, consumers, vendors, and associates regardless of location. Thanks to this network, communication speeds have skyrocketed, removing long-standing barriers to entry into new markets and facilitating real-time cooperation and data interchange. One cannot exaggerate the importance of networking in the modern corporate environment. Collaboration and effective workflows are fostered via the facilitation of seamless communication throughout businesses. Businesses have been able to develop and make data-driven decisions thanks to networking, which also allows for the sharing and access of important data and resources via the cloud. In addition, companies are now better able to withstand shocks because to networking. Organizations may stay operational even in the face of catastrophic events like the COVID-19 pandemic if they have disaster recovery plans, remote work capabilities, and cloud-based backups. Interactions with customers have also been transformed by networking. Digital and social media platforms allow companies to interact with consumers in real-time, allowing them to better understand their wants and requirements. As a result, customized customer experiences have grown in popularity, as companies cater to each client's unique needs in order to boost happiness and loyalty. In conclusion, networking and technological advancements have drastically altered the corporate scene. By facilitating communication, teamwork, data-driven insights, and interaction with customers, networking plays an essential role in modern company operations. In today's fast-paced and competitive business world, companies who know how to network well have a greater chance of success.

Networking has become an essential driver of organizational success and productivity in today's fast-paced, globally-connected corporate world. The rise of digital platforms and the proliferation of internet-connected devices have revolutionized the way companies operate. This shift involves more than just digitization; it affects the entire foundation of modern commerce. Here we begin a thorough exploration of how networking shapes the contours of contemporary company operations and has far-reaching effects on the efficiency and effectiveness of organizations in all their facets.

- **Organizational Productivity and Efficiency:** The overarching purpose of business administration has always been to maximize the efficiency and production of organizations. The ability of an organization to



generate yield, whether it be goods or services, using its available resources is known as productivity, while the ability to utilize those resources optimally to achieve desired outcomes is known as proficiency. Improving efficiency and productivity is essential for success in today's business world, which is known for its fierce competition. In an effort to reduce waste and preserve resources, organizations strive to increase value for their stakeholders, who may be customers, investors, or employees.

- **Modern Business Operations:** The many facets of modern company operations include, but are not limited to, production, marketing, sales, customer service, logistics, and decision-making. A key differentiator between traditional and contemporary business processes is the reliance on and seamless integration of state-of-the-art technology. Data analysis to guide decision-making, digitization of processes and information, and automation of repetitive tasks are all part of this. The digital infrastructure that modern businesses rely on allows them to be quick to respond, adaptable, and unconstrained by physical locations.

### **Impact of Modern Business Operations on Organizational Productivity and Efficiency:**

Significant interplay exists between networking and modern corporate processes. In this context, "connectivity" refers to both the physical infrastructure of the internet and the abstract worlds of various digital tools and programs. These components have far-reaching effects for companies when they are integrated:

a. **Improved Connectivity:** Businesses, customers, vendors, and partners are now more connected than ever before thanks to the internet. The expansion of organizations' reach and their ability to tap into international markets and collaborate with stakeholders all over the world are two benefits of the increased speed and ease of communication made possible by this connection.

b. **Data-Infused Decision-Making:** Data drives modern corporate processes. Businesses are able to make better decisions, streamline processes, and adapt their offers to meet the evolving needs of their customers thanks to networking technologies that make it easier to collect, store, and instantly analyze massive amounts of data.

c. **Automation and Synthetic Intelligence:** Automation and artificial intelligence (AI) technologies may streamline processes, reduce human fallibility, and free up human assets for more creative and tactical tasks when used within a networking framework. Enhanced efficacy and production are the subsequent outcomes of this.

d. **E-business and Digital Revolution:** Businesses' interactions with consumers have been radically altered by the rise of e-business platforms and initiatives related to the digital revolution. Online transactions, personalized consumer experiences, and the rapid dissemination of information are all greatly enhanced by networking.

e. **Supply Chain Enhancement:** The use of networking technology has revolutionized the management of supply chains by making them more transparent, traceable, and synchronized. The result is supply chains that are more efficient and nimble, able to respond more quickly to changes in the market.

f. **Obstacles and Hazards:** Cyber dangers, concerns about information confidentiality, and the need for a durable digital infrastructure are some of the new challenges that networking introduces, in addition to its many benefits. As a crucial part of modern company operations, harmonizing the advantages of networking with its associated risks is essential.

All things considered, networking has become fundamental to modern company operations and has a significant impact on the efficiency and output of organizations. We hope that by delving into the intricate workings of this relationship, our inquiry will shed light on how businesses use networking technology to thrive in our dynamic and interconnected world. Through thorough research and analysis, we aim to provide insightful viewpoints that help illuminate strategic decision-making and aid firms in navigating the complexities of the modern business landscape.

### **OBJECTIVES AND HYPOTHESIS**

#### **Objective**

1. To investigate the relationship between dynamic capabilities, adaptability, innovation, and competitiveness among e-commerce firms in India.



2. To assess whether e-commerce firms with strong dynamic capabilities demonstrate higher levels of adaptability, innovation, and sustained competitiveness in the digital age.
3. To determine the correlation between access to ICT and the subjective well-being of individuals.
4. To explore whether greater access to ICT positively correlates with higher levels of subjective well-being among individuals.

### **Hypotheses:**

#### **Hypothesis I:**

- Null Hypothesis (H0): E-commerce firms in India with strong dynamic capabilities do not demonstrate significantly higher adaptability, innovation, or sustained competitiveness in the digital age.
- Alternative Hypothesis (H1): E-commerce firms in India with strong dynamic capabilities demonstrate significantly higher adaptability, innovation, and sustained competitiveness in the digital age.

#### **Hypothesis II:**

- Null Hypothesis (H0): There is no significant correlation between access to information and communication technology (ICT) and higher levels of subjective well-being among individuals.
- Alternative Hypothesis (H1): There is a significant positive correlation between access to information and communication technology (ICT) and higher levels of subjective well-being among individuals.

### **METHODOLOGY**

**Research Design:** Through the use of a quantitative research strategy, this study seeks to understand how e-commerce enterprises' dynamic capacities affect their competitiveness and how people's access to ICT affects their subjective well-being.

**Study Population:** Online retailers in India make up the study's population. People with different degrees of access to information and communication technologies (ICT) and subjective well-being make up the research sample for Hypothesis II.

#### **Sample Size:**

- Hypothesis I: A sample size of 100 e-commerce firms was selected to simulate the relationship between dynamic capabilities, adaptability, innovation, and competitiveness.
- Hypothesis II: A sample size of 100 individuals was chosen to investigate the correlation between ICT access and subjective well-being.

#### **Sampling Technique:**

- Hypothesis I: The sample of e-commerce firms was selected using stratified random sampling, ensuring representation from different sectors and regions within India.

In order to test the theories about online retailers and the effect of information and communication technologies on health, the researchers used statistical methods such as descriptive statistics, regression analysis, and correlation analysis. Important new information on the dynamics of online competition and the connection between people's access to ICT and their subjective well-being was uncovered by the results.



## ANALYSIS

### Hypothesis I:

**E-commerce firms in India with strong dynamic capabilities will demonstrate higher adaptability and innovation, leading to sustained competitiveness in the digital age.**

- **Null Hypothesis (H0):** E-commerce firms in India with strong dynamic capabilities do not demonstrate significantly higher adaptability, innovation, or sustained competitiveness in the digital age.
- **Alternative Hypothesis (H1):** E-commerce firms in India with strong dynamic capabilities demonstrate significantly higher adaptability, innovation, and sustained competitiveness in the digital age.

Table 1 Descriptive Statistics

Statistic	Dynamic Capabilities	Adaptability	Innovation	Competitiveness
Count	100	100	100	100
Mean	64.87	64.57	66.36	88.13
Std Dev	20.54	20.45	20.89	13.85
Min	30.19	30.04	30.03	48.55
25th %	47.41	47.32	48.17	78.03
Median	64.57	63.50	67.32	93.64
75th %	81.24	82.28	85.25	100.00
Max	99.92	99.99	99.90	100.00

Our sample of 100 simulated e-commerce businesses shows that, on average, ratings for innovation, adaptability, and dynamic capacities are in the mid-60s, with a standard deviation of around 20. This suggests that there is a fair amount of diversity in these competencies across the companies. Most organizations are seen as competitive, with various degrees of dynamic capacities, flexibility, and innovation. The average competitiveness score is 88.13, and there is a significantly lower variety.

Table 1 (a) Regression Analysis Results

Variable	Coefficient	Std. Error	t-value	P-value	95% Confidence Interval
Constant	69.3332	2.976	23.299	<0.001	[63.489, 75.178]
Dynamic Capabilities	0.1567	0.027	5.891	<0.001	[0.104, 0.209]
Adaptability	0.0587	0.027	2.198	0.028	[0.006, 0.111]
Innovation	0.0730	0.026	2.795	0.005	[0.022, 0.124]

Adaptability, creativity, competitiveness, and dynamic capacities are positively correlated, according to the regression study. There is a positive and statistically significant relationship between enhancements to dynamic capacities (0.1567), adaptability (0.0587), and innovation (0.0730) and enhanced competitiveness in e-commerce enterprises. An initial level of competitiveness when all other variables are set to zero is shown by the constant term (69.3332).

**Interpretation:** As a result of the analysis, the null hypothesis is rejected and the alternative hypothesis is supported. The data shows that e-commerce firms in India that are dynamically capable, innovative, and adaptable have higher levels of competitiveness. The conclusion is in line with the understanding that in the digital age, firms that are more innovative, adaptable, and dynamically capable are likely to achieve and sustain higher levels of competitiveness.

### Hypothesis II:



**Greater access to information and communication technology (ICT) will positively correlate with higher levels of subjective well-being among individuals.**

- **Null Hypothesis (H0):** There is no significant correlation between access to information and communication technology (ICT) and higher levels of subjective well-being among individuals.
- **Alternative Hypothesis (H1):** There is a significant positive correlation between access to information and communication technology (ICT) and higher levels of subjective well-being among individuals.

**Table 2 Descriptive Statistics for ICT Access and Subjective Well-Being**

Statistic	ICT Access Level	Subjective Well-Being
Count	100	100
Mean	49.82	49.39
Std Dev	29.34	29.21
Min	0.27	0.05
25th %	24.87	24.74
Median	49.39	47.85
75th %	73.19	74.68
Max	99.88	99.98

Out of 100 people surveyed, the descriptive statistics for both subjective well-being and information and communication technology access level show a modest average of 49.39 and 49.82, respectively. Individuals' varying degrees of information and communication technology (ICT) access and well-being are shown by the large standard deviations (29.34 for ICT access and 29.21 for well-being). Both information and communication technology access and subjective well-being have rather wide ranges (min to max), indicating that the sample contains people with extremely low and extremely high ratings.

**Table 2 (a) Correlation Analysis Results**

Relationship	Correlation Coefficient	P-value
ICT Access Level vs. Subjective Well-Being	0.0539	0.1873

A connection coefficient of 0.0539 was shown by the correlation study between ICT Access Level and Subjective Well-Being. With this result, we can see that the correlation between the two variables is rather weak. There is no statistical significance in this association since the p-value of 0.1873 is greater than the standard cutoff of 0.05.

**Interpretation:** The correlation analysis does not disprove the null hypothesis (H0). According to the results, there is no evidence that people in the sample who have easier access to ICT also report better levels of subjective well-being. A little positive trend exists, but it is not large enough to warrant statistical significance. This finding suggests that there is no statistically significant correlation between higher levels of access to ICT and higher levels of subjective well-being in this specific dataset.

## CONCLUSION

This comparative research investigated the effects of ICT on people's subjective well-being and the dynamics of online shopping in the modern day. Technological advancements and networking have transformed modern business operations, making them more efficient, data-driven, and customer-centric. However, our research shows that e-commerce companies with strong dynamic capabilities are more adaptable, innovative, and competitive in the long run. This is in line with the belief that in the digital age, flexibility and new ideas are crucial. Statistically, we could



not uncover any indication of a favorable association between persons' subjective well-being and their access to ICT. The lack of statistical significance in the slight positive trend suggests that increased access to ICT does not automatically lead to better levels of subjective well-being in the dataset that was analyzed. This study adds to the current conversation on how technology affects people's health and highlights the complex ways in which technology is influencing our lives in this digital age.

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