

European journal of volunteering and community-based projects

Vol.2, No 1; 2021

ISSN: 2724-0592

E-ISSN: 2724-1947



sponsored by



Organizzazione Italiana  
Sviluppo Innovativo

Journal of  
Odv Casa Arcobaleno  
Iscritta Registro Terzo Settore della Regione Piemonte  
C.F. 94570230014

Publication: 31 December 2020

Data di pubblicazione: 31 Dicembre 2020

## **Place of publication: Torino (Italy)**

### **About the journal**

The journal aims to address issues related to the third sector and community-based activities. The magazine therefore has the aim of spreading the culture of the third sector (voluntary organizations, social promotion associations, philanthropic bodies, social enterprises, mute aid companies, recognized and non-recognized associations, ecclesiastical bodies), the topics of interest are:

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**Titolo:**

## **Una rete contro l'HIV – La città di Torino e le associazioni di volontariato aderiscono all'iniziativa Fast Track Cities**

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**Keywords:** rete, HIV, Torino, Fast Track Cities

**Doi:** 10.5281/zenodo.4415288

Il virus dell'immunodeficienza umana (Human Immunodeficiency Virus - HIV) è diventato noto come patogeno responsabile di epidemie su larga scala a partire dal 1981, sebbene esistente già in precedenza ma fino ad allora mai classificato con precisione come specifico agente virale.<sup>1</sup> Da allora i dati epidemiologici, la ricerca sui meccanismi virali di sopravvivenza e replicazione, la prevenzione e le innovazioni terapeutiche si sono nel tempo susseguiti nel tentativo di inquadrare, delimitare e contrastare le ricadute del virus sulla salute di individui e comunità. Ad oggi la battaglia è ancora in corso. L'Organizzazione Mondiale della Sanità ha stimato per il 2019 una prevalenza di individui sieropositivi all'HIV pari a circa 38.000.000, dei quali 1.700.000 sono stati diagnosticati nel corso del 2019.<sup>2</sup> Gli adulti sieropositivi in terapia antiretrovirale sono il 68%. Il numero di decessi per cause correlabili all'HIV è stato nel 2019 pari a 690.000,2 di cui 136.449 in Europa.<sup>3</sup> In Europa la modalità di trasmissione prevalente è per via sessuale (74% dei casi accertati in Europa Occidentale, 52% in Europa centrale, 73% nell'Europa dell'Est) e in misura decisamente minore associata all'utilizzo di sostanze stupefacenti per via endovenosa (3% Europa Occidentale, 2% Europa Centrale, 23% Europa dell'Est).<sup>3</sup>

Le iniziative volte a contrastare l'emergenza epidemica hanno nel corso degli anni contribuito alla riduzione dell'incidenza della patologia e facilitato l'azione preventiva volta non solo a ridurre i contagi ma anche a individuare precocemente i soggetti sieropositivi con l'obiettivo di prenderli il prima possibile in carico da un punto di vista terapeutico in modo tale da evitare che siano a loro volta fonte di contagio e che sviluppino la sindrome da immunodeficienza acquisita (AIDS) e le conseguenze ad essa associate. Tra queste iniziative va ricordata "Fast Track Cities",<sup>4</sup> una partnership globale lanciata in occasione della conferenza mondiale AIDS nel 2014 tra città e municipalità di tutto il mondo (tra cui Parigi promotrice del progetto) e tre specifiche organizzazioni che dedicano i loro sforzi alla lotta al virus: IAPAC (International Association of Providers of AIDS Care)<sup>5</sup>, UNAIDS (United Nations Programme on HIV/AIDS)<sup>6</sup>, UN-Habitat (United Nations Human Settlements Programme)<sup>7</sup>. Tale iniziativa è volta a costruire una rete tra città con il fine ultimo di porre fine all'epidemia di AIDS/HIV entro il 2030. L'adesione all'iniziativa prevede, da parte dei primi cittadini delle città partecipanti, l'impegno a raggiungere entro il 2020 il target del 90% di persone con Hiv che conoscono il proprio status, di persone che conoscono il proprio stato e sono in terapia antiretrovirale e di persone in terapia che raggiungono la soppressione virale. Per il 2030 i medesimi indicatori devono raggiungere la quota percentuale del 95%.<sup>4</sup>

Il 2 ottobre 2020 anche la municipalità di Torino, capoluogo della Regione Piemonte, si è unita alle circa 300 città che aderiscono all'iniziativa "Fast Track Cities". Nel 2018 in Piemonte sono state registrate 198 nuove diagnosi di infezione da HIV (di cui 108 a Torino) corrispondenti a un'incidenza

di 4,5 casi ogni 100.000 abitanti.<sup>8</sup> Tale dato è significativamente in calo rispetto agli anni precedenti (-22% rispetto al 2017) ed è il valore più basso registrato dal 2000. Sono numerosi gli stranieri coinvolti (71 nuove diagnosi), soprattutto giovani provenienti da Paesi ad alta endemia di HIV. La fascia di età giovane adulta (25-34 anni) è quella che riporta il dato di incidenza più elevato, pari a 11,9 casi ogni 100.000 abitanti).<sup>8</sup> Nel 2018 si registrava ancora una quota elevata (39%) di diagnosi tardive, avvenute in stadio avanzato di infezione da HIV, nonostante la vasta proposta di test di screening per l'HIV (~177.000 nel 2018) a cura dei centri per le malattie sessualmente trasmissibili e di alcune associazioni presenti sul territorio.<sup>8</sup> Proprio in considerazione del ruolo fondamentale nella prevenzione delle infezioni da HIV svolto negli ultimi anni da parte delle associazioni di volontariato, queste ultime sono state coinvolte nella sottoscrizione della Città di Torino della Carta di Parigi. Associazioni aderenti alla Consulta Regionale per l'HIV (come Anlaid, Arcobaleno Aids, Casarcobaleno, Croce Rossa Giobbe, Gruppo Abele, Lila) da anni portano avanti attività di somministrazione di test rapidi per lo screening dell'HIV, di supporto e gruppi di auto-aiuto, di accompagnamento ai servizi, di formazione – educazione – comunicazione sanitaria, di consulenza legale in contrasto a stigma e discriminazione. L'adesione all'iniziativa "Fast Track Cities" del Comune di Torino e la stretta collaborazione delle associazioni coinvolte mira a favorire lo sviluppo di azioni concrete nella lotta al virus: l'aumento del numero dei test di screening e diagnostici, l'incremento dell'attività educativa e di sensibilizzazione nelle scuole, una maggiore inclusività nella prevenzione e nella sorveglianza di gruppi a maggior rischio come migranti, sex worker e carcerati, la valutazione dell'impatto del contesto pandemico da SARS-CoV-2 attuale sulle persone con HIV.

Lo sviluppo di azioni concrete, possibile solo grazie alla stretta collaborazione tra Servizio Sanitario Nazionale e organizzazioni e associazioni operanti sul territorio, è fondamentale per raggiungere gli obiettivi dell'iniziativa "Fast Track Cities". Secondo alcune stime dello European Centre for Disease Prevention and Control, il tempo che passa tra l'esposizione al virus e la diagnosi è in media pari a 3 anni. Sono questi 3 anni in cui il soggetto positivo all'HIV non riceve terapie che a tutti gli effetti vanno considerate come salvavita e in cui può inconsapevolmente contagiare altre persone.<sup>9</sup> La diagnosi precoce è importante e contribuisce a migliorare aspettativa di vita e qualità della vita negli individui sieropositivi. La riduzione del numero di nuove diagnosi di infezione da HIV in Europa necessita di focalizzarsi su tre aspetti principali:

- Agire sulla prioritizzazione di misure di prevenzione efficaci ed inclusive: sensibilizzazione sul tema, promozione del sesso protetto, facilitazione di accesso alla profilassi pre-esposizione per l'HIV;
- Agire sulla disponibilità di counselling e di servizi di screening adoperanti test efficaci per l'individuazione rapida e precoce della positività all'HIV sia all'interno delle strutture sanitarie che in contesti extra-sanitari;
- Agire sulla facilità di accesso ai servizi di diagnosi e trattamento, migliorandone efficacia, efficienza e qualità delle prestazioni erogate.<sup>9</sup>

L'auspicio è che l'adesione ad importanti iniziative internazionali come "Fast Track Cities" e la strutturazione di reti di collaborazione consentano il reale raggiungimento degli obiettivi previsti per il prossimo decennio e del totale si spera definitivo controllo dell'epidemia da HIV/AIDS che per numerosi anni ha mietuto vittime in Italia e nel resto del mondo.

**Note**

- <sup>1</sup> Sharp PM, Hahn BH. Origins of HIV and the AIDS pandemic. Cold Spring Harb Perspect Med. 2011;1(1):a006841. doi:10.1101/cshperspect.a006841
- <sup>2</sup> World Health Organization. HIV/AIDS. Disponibile al link: <https://www.who.int/news-room/fact-sheets/detail/hiv-aids> (ultimo accesso 22/12/2020)
- <sup>3</sup> European Centre for Disease Prevention and Control. HIV Transmission Risk Patterns in Europe. Disponibile al link: <https://www.ecdc.europa.eu/sites/default/files/images/hiv-transmission-risk-patterns-in-Europe-infographic.png> (ultimo accesso 22/12/2020)
- <sup>4</sup> Fast-Track Cities Global Web Portal. Disponibile al link: <https://fast-trackcities.org/> (ultimo accesso 22/12/2020)
- <sup>5</sup> International Association of Providers of AIDS Care (IAPAC). Disponibile al link: <https://www.iapac.org/> (ultimo accesso 22/12/2020)
- <sup>6</sup> The Joint United Nations Programme on HIV/AIDS (UNAIDS). Disponibile al link: <https://www.unaids.org/en> (ultimo accesso 22/12/2020)
- <sup>7</sup> United Nations Human Settlements Programme (UN-Habitat). Disponibile al link: <https://unhabitat.org/> (ultimo accesso 22/12/2020)
- <sup>8</sup> Servizio di riferimento regionale di Epidemiologia per la sorveglianza, la prevenzione e il controllo delle malattie infettive (SEREMI). HIV in Piemonte. Rapporto 2018 (ed. 2019). Disponibile al link: <https://www.seremi.it/sites/default/files/Report%20HIV%202018%20ed.%202019.pdf> (ultimo accesso 22/12/2020)
- <sup>9</sup> European Centre for Disease Prevention and Control. HIV/AIDS surveillance in Europe - 2018 data (2019) Disponibile al link: <https://www.ecdc.europa.eu/sites/default/files/documents/hiv-surveillance-report-2019.pdf> (ultimo accesso 22/12/2020)

## **I Bilanci degli ETS e la determinazione di costi e ricavi figurativi**

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### **Abstract**

Il D.lgs. 117/2017 ha portato a una modifica della regolamentazione del terzo settore, il 05.03.2020 un apposito Decreto Ministeriale ha introdotto l'obbligo di nuovi modelli di rendicontazione che spingono gli enti del terzo settore a rappresentare anche elementi non finanziari individuandone la più opportuna valorizzazione economica. Il legislatore ad oggi non offre strumenti per darne una valutazione oggettiva, il gap potrebbe essere colmato dalla valutazione di impatto sociale e della SIA theory. La catena del valore richiamata e ridefinita attraverso diverse fasi dalle linee guida della Camera di Commercio di Torino fornisce un primo approccio per colmare il gap e rispondere al bisogno del pubblico di rilevare l'impatto generato e il valore aggiunto di risorse pubbliche limitate assorbite dal terzo settore. Allo stesso tempo la SIA theory potrebbe rispondere all'asimmetria informativa tra organizzazione e finanziatori generando un rapporto virtuoso di fiducia reciproca. Le riflessioni sull'evoluzione spinta dalla riforma dirigono la futura ricerca all'individuazione di nuovi modelli integrati che devono avere un equilibrio di costo efficacia.

**Keywords:** impatto sociale; schemi di bilancio; SIA theory; catena del valore

**Doi:** 10.5281/zenodo.4415282

### **1.Introduzione**

La Legge 106 / 2016 e il D.Lgs. 117/2017 richiama all'art. 13 e 14 l'obbligo degli Enti del Terzo Settore (ETS) di redigere il bilancio formato da stato patrimoniale, rendiconto gestionale e relazione di missione definiti attraverso apposito Decreto Ministeriale del 05.03.2020 che diventerà obbligatorio. I bilanci degli ETS con ricavi, rendite, proventi o entrate comunque denominate inferiori a 220.000€ possono essere redatti nella forma del rendiconto di cassa. Il Decreto prevede la presentazione di tre documenti, Stato patrimoniale, Modello A, Rendiconto gestionale, Modello B, Relazione di missione, Modello C che secondo il Decreto Ministeriale dovranno essere depositati presso il RUNTS (registro imprese per le «imprese sociali»). Inoltre gli ETS con ricavi, rendite proventi o entrate comunque denominate superiori ad 1.000.000 di € devono redigere e depositare presso il RUNTS e pubblicare nel loro sito internet il proprio bilancio sociale (redatto secondo le linee-guida adottate con decreto del Ministero del Lavoro e delle Politiche Sociali). Il Ministero del Lavoro e delle Politiche Sociali in data 5 marzo 2020 ha provveduto ad emanare un decreto con il quale ha adottato gli schemi di bilancio che dovranno essere utilizzati per i Rendiconti relativi all'anno 2021 e che dovranno essere depositati al Runts entro il 30 giugno 2022. Gli schemi di bilancio e di rendiconto ricalcano la struttura degli articoli rispettivamente 2424 e 2425 del Codice

Civile e sono sostanzialmente fissi. Tuttavia, le voci precedute da numeri arabi o lettere minuscole dell'alfabeto possono essere ulteriormente suddivise, senza eliminare la voce complessiva, per aumentare la chiarezza del documento oppure raggruppare quando l'insieme delle voci contabili è irrilevante o quando esso favorisce la chiarezza del bilancio. Inoltre, se per due esercizi consecutivi gli importi sono pari a zero, le voci precedute da numeri arabi o lettere minuscole dell'alfabeto possono essere eliminate. Nella predisposizione del bilancio bisognerà conformarsi alle clausole generali, ai principi generali di bilancio e ai criteri di valutazione di cui rispettivamente, agli articoli 2423, 2423 bis e 2426 del Codice Civile e ai principi contabili nazionali, in quanto compatibili con l'assenza dello scopo di lucro e con le finalità civiche, solidaristiche e di utilità sociale degli enti del Terzo settore. In sostanza, occorrerà redigere una contabilità di competenza o, detto in altro modo «in partita doppia» secondo i principi della ragioneria (Alfiero et al., 2015). Il documento più rilevante per individuare l'importanza dell'analisi condotta è il modello B legato al rendiconto gestionale che presenta un modello a sezioni contrapposte con le uscite da indicare a sinistra dello schema e le entrate da indicare a destra dello schema con comparazione tra i valori dell'esercizio oggetto del Rendiconto e quelli dell'esercizio precedente. Sono stati introdotti dei risultati sezionali allo scopo di rendere chiaro l'avanzo/disavanzo di ogni specifica tipologia di attività condotta dall'ente. La voce costi e proventi figurativi al termine del report richiama la necessità, seppur facoltativa di fornire una rappresentazione coerente dell'impatto economico che le attività dell'ETS potrebbe generare. Questo aspetto, secondo il decreto e gli schemi, viene richiamato anche all'interno del rendiconto della gestione per fornire una visione reale delle attività che spesso non trovano collocazione per prevalenza del volontariato come impatto economico nel contesto di riferimento. Questo aspetto apre un gap significativo non ancora colmato e sanato da parte del legislatore su tecniche, approcci e significato di impatto sociale, di costi e di ricavi figurativi e di elementi correlati. La valutazione di questi elementi, associati alla necessità oltre determinati parametri oggettivi di definire attraverso il rendiconto sociale l'operato dell'ETS per darne una quantificazione e valutazione trasparente, crea il bisogno accademico e pratico di individuare modalità, definizioni e possibili modalità operative di quantificazione e rappresentazione. Il paper presenta nel successivo paragrafo la definizione di impatto sociale e il processo che definisce la sua valorizzazione nel tempo, il capitolo successivo si concentra sul concetto di Social Impact Assessment (SIA) per definire quello che potrebbe essere l'approccio più completo per identificare l'impatto sociale. Ultima sezione propone un approccio pratico che metta insieme SIA analysis, strumenti e fornisca una prospettiva per future indagini.

### Definizione e processo di Impatto sociale

Valutazione di impatto sociale (Social Impact Assessment o SIA) in letteratura presenta diverse definizioni. La prima definizione è stata realizzata da Duncan e Jones (1976) ed è stata discussa da Cramer, Dietz e Johnston (1980). Una valutazione dell'impatto sociale è definita come identificazione, analisi, e valutazione degli impatti sociali derivanti da un particolare evento. L'impatto sociale è definibile come un miglioramento o un deterioramento significativo del benessere delle persone o un cambiamento significativo in un aspetto della comunità. L'ambiguità associata agli impatti, la mancanza di definizioni operative per molti costrutti, così come una mentalità asociale (Burdge e Vanclay, 1995), ha portato a concentrarsi sull'indagine sugli impatti misurabili (ad esempio, economici e demografici) e / o indicatori politicamente convenienti come il cambiamento sull'assetto sociale, alla creazione di posti di lavoro o utilizzo dei servizi integrativi alla realtà attuale (Gramling e Freudenburg, 1992). All'altro estremo, Cernea (1994) lamenta che ci sono state alcune analisi sociali approfondite che hanno la tendenza a diventare lunghe panoramiche sociali senza concentrarsi sui probabili di impatto sociale futuro. I primi esempi di analisi sono individuabili nelle società minerarie che tendevano a favorire questi progetti di "monitoraggio sociale" (si veda, ad

esempio,1999a, b, 2000). Sono stati fatti tentativi da vari scienziati sociali per sviluppare classificazioni dei tipi di impatti sociali, ma pochi hanno sviluppato elenchi di specifici impatti, e ancora meno hanno fornito definizioni operative per definire le variabili. Tra le classifiche ci sono le seguenti. Audrey Armor (1990) identifica lo stile di vita delle persone: come vivono, lavorano, giocano e interagiscono tra di loro giorno per giorno; la loro cultura: credenze, costumi e valori condivisi; la loro comunità - la sua coesione, stabilità, carattere, servizi e strutture. Vanclay (1999), espandendo l'elenco di Audrey Armour, ha identificato altri elementi integrando la teoria come lo stile di vita delle persone, ovvero come vivono, lavorano, giocano e interagiscono tra di loro giorno per giorno; la loro cultura, cioè le loro credenze, costumi, valori e lingua condivisi o dialetto; la loro comunità - la sua coesione, stabilità, carattere, servizi e strutture; i loro sistemi politici - la misura in cui le persone sono in grado di partecipare nelle decisioni che incidono sulla loro vita, il livello di democratizzazione che stanno assumendo, il luogo e le risorse fornite a tal fine; il loro ambiente - la qualità dell'aria e dell'acqua che le persone uso; la disponibilità e la qualità del cibo che mangiano; il livello di pericolo o rischio, polvere e rumore a cui sono esposti; l'adeguatezza dei servizi igienico-sanitari, la loro sicurezza fisica e il loro accesso e controllo sulle risorse; la loro salute e il loro benessere, dove "salute" è intesa in un certo modo simile alla definizione fornita dall'Organizzazione mondiale della sanità: "uno stato di completo benessere fisico, mentale e sociale, non solo assenza di malattie o infermità "; i loro diritti personali e di proprietà, in particolare se le persone colpite da svantaggio personale o economico, che può includere una violazione delle loro libertà civili; e le loro paure e aspirazioni - le loro percezioni sulla loro sicurezza, le loro paure sul futuro della loro comunità e le loro aspirazioni per il loro futuro e il futuro dei loro figli. Juslén (1995) ha ritenuto che un elenco universale di impatti sociali adatto ogni caso non era possibile, ma ha sostenuto che una lista di controllo sarebbe stata utile soprattutto in base allo scopo specifico. Ha identificato diverse categorie di impatto generale:

1. impatti sociali "standard" riguardanti il livello di rumore, l'inquinamento ecc.;
2. impatti psicosociali (come la coesione della comunità, l'interruzione di social networks);
3. paura anticipatoria;
4. impatti dello svolgimento della valutazione;
5. impatti sui servizi statali e privati; e
6. impatti sulla mobilità (come trasporti, sicurezza, ostacoli).

Taylor et al. (1995) hanno identificato più in generale gli stili di vita, atteggiamenti, credenze e valori e organizzazione sociale. Branch et al. (1984) hanno evidenziato gli elementi legati alle risorse della comunità, organizzazione sociale della comunità e indicatori del benessere individuale e comunitario. Gramling e Freudenburg (1992) distinguono tra sei sistemi di ambiente umano:

1. Sistemi biofisici e sanitari;
2. Sistemi culturali;
3. Sistemi sociali;
4. Sistemi politico / legali;
5. Sistemi economici; e
6. Sistemi psicologici.

Il Comitato interorganizzativo sulle linee guida e i principi per il sociale “La valutazione dell'impatto (1994)” includeva un elenco di variabili dell'impatto sociale. Queste variabili indicano un cambiamento misurabile nella popolazione umana, nelle comunità e nelle relazioni sociali risultante da un progetto di sviluppo o da un cambiamento di politica (Burdge et al., 2003).

L'integrato quadro di Sloodweg et al. (2001) identifica i percorsi attraverso i quali gli impatti ambientali e sociali derivano da progetti specifici e aiuta a pensare agli impatti sociali. Derivato dall'ambiente l'analisi delle funzioni messe in luce dal framework proposto separa un cambiamento fisico in ambiente da un impatto fisico, cioè un cambiamento nelle funzioni fornite dall'ambiente (cioè i prodotti e servizi ambientali). Per esempio, un piatto d'acqua fluttuante (un cambiamento fisico) può o non può causare un impatto ambientale (modifica ai servizi ambientali). La distinzione tra un processo di cambiamento e l'impatto nell'ambiente fisico incoraggiato pensando agli impatti sociali più o meno allo stesso modo. Molti cambiamenti sociali lo sono non di per sé "impatti". Se "impatto sociale" si riferisce effettivamente agli impatti sperimentato dagli esseri umani (a livelli di aggregazione individuali e superiori) in senso corporeo (fisico) o cognitivo (perceptivo), quindi molte variabili di impatto comunemente misurate negli studi SIA - per esempio l' crescita della popolazione, presenza di lavoratori edili, ecc. - non sono impatti, ma processi di cambiamento che può portare a impatti. Un aumento della popolazione, o la presenza di estranei, non sono in senso stretto impatti. Invece, gli impatti che risulteranno probabilmente da questi processi di cambiamento, ad esempio il cambiato e le percezioni sulla natura della comunità (comunità, coesione della comunità), ha cambiato le percezioni sull'attaccamento personale alla comunità e forse il fastidio e il turbamento come risultato del progetto. I modi in cui i processi di cambiamento sociale sono percepiti derivano da un significato o valutazione dipendente dal contesto sociale in cui agiscono i vari gruppi sociali. Alcuni settori o gruppi nella società sono in grado di adattarsi rapidamente per sfruttare le opportunità che derivano dalla nuova situazione. Altri sono meno in grado di adattarsi (ad esempio i gruppi vulnerabili) e supporterà la maggior parte delle conseguenze negative del cambiamento. A completare l'interpretazione del framework proposto da Sloodweg et al. (2001), qualche spiegazione delle iterazioni sono necessarie per costruire meccanismi di feedback. Processi di cambiamento sociale che risultano direttamente dall'intervento, le cosiddette modifiche di primo ordine, possono portare a altri processi di cambiamento sociale, processi di cambiamento di secondo ordine o superiore. Ad esempio, il reinsediamento può portare a processi di migrazione dalle campagne alle città e cambiamenti nella produzione alimentare. Inoltre, l'esperienza sociale del cambiamento (ovvero, gli impatti umani) possono anche indurre le persone a intraprendere altri comportamenti che portano a ulteriori processi di cambiamento sociale. Ad esempio, gli impatti umani negativi (esperienze) associate alla disoccupazione possono attivare il cambiamento del processo di migrazione dalle campagne alle città in cerca di lavoro. Il cambiamento sociale e i processi possono anche provocare cambiamenti biofisici. Sviluppi economici possono aumentare il numero di turisti in una particolare area e possono avere una seria influenza sull'uso del suolo e qualità dell'acqua, che a loro volta possono avere impatti umani indiretti attraverso una riduzione della produzione agricola e successivamente del livello di reddito per i piccoli agricoltori.

Nella letteratura SIA non viene fatta alcuna distinzione tra i processi di cambiamento sociale e gli impatti sociali che vengono sperimentati. Vengono avviata la mappatura di processi di cambiamento sociale legati ad attività o politiche del progetto. I processi si svolgono indipendentemente dal locale contesto sociale. Il reinsediamento, ad esempio, è un processo di cambiamento sociale, messo in moto mediante, ad esempio, l'attività di bonifica del terreno (per una strada o un progetto agricolo), o dall'inondazione di un'area mediante la costruzione di dighe. I processi di cambiamento sociale possono portare a molti altri processi di cambiamento sociale di secondo ordine. Il reinsediamento

può portare a processi come la migrazione dalle campagne alle città e i cambiamenti nella produzione alimentare. A seconda delle caratteristiche del contesto sociale locale e dei processi di mitigazione messi in atto, i processi di cambiamento sociale possono portare a impatti sociali.

Il quadro presentato da Slootweg et al. (2001) presenta un modo utile di pensando all'integrazione degli impatti sociali e ambientali e per concettualizzare l'intera gamma di impatti sociali che possono verificarsi da un dato intervento. Seguendo percorsi di impatto, o catene causali, e, in particolare, pensando alle iterazioni che potrebbero essere causate, identificando una gamma di impatti. Ciò rende il modello un utile ambito meccanismo e un aiuto euristico che sarà in seguito sviluppato e ampliato.

#### SIA theory e approccio alla catena del valore

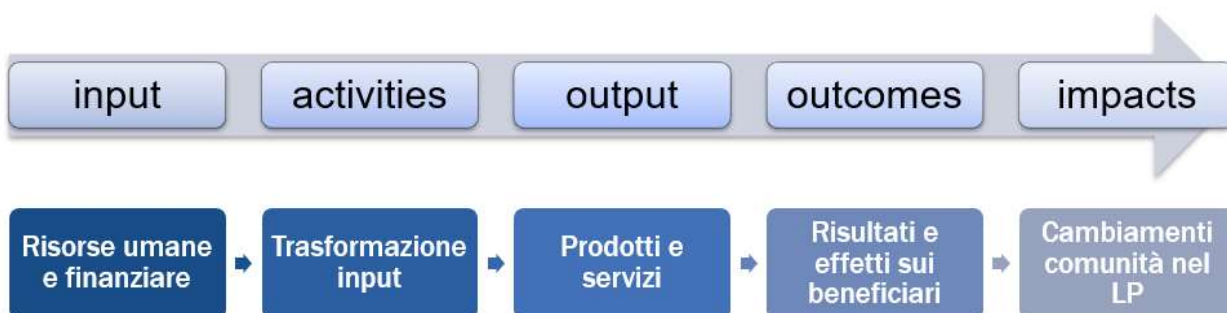
La SIA theory prevede un processo composto da tre fasi: identificazione, analisi e valutazione. I metodi differiranno da un passaggio all'altro. L'identificazione degli impatti richiede immaginazione, pensiero creativo e una comprensione delle persone colpite e dei sistemi sociali in cui vivono e lavorano. L'analisi assegna le probabilità alle possibilità scoperte nella fase di identificazione e tenta di elaborare idee abbozzate, fornendo dati quantitativi e qualitativi a seconda dei casi (Vanclay, 2010). La valutazione integra le informazioni dall'identificazione e dall'analisi in un'immagine complessiva di patti e risultanti dall'azione proposta. La valutazione non richiede la riduzione di tutti gli impatti a un'unica dimensione, ma richiede una chiara visualizzazione informativa dei dati (Du Pisani & Sandham, 2006). Il valutatore d'impatto potrebbe voler fornire una valutazione complessiva per un piano proposto, ma le informazioni su cui tale valutazione si basa dovrebbero essere accessibili al lettore escludendo il giudizio sommario (Masoni, 2002; Biancone & Secinaro, 2020). La definizione include due criteri per un impatto: uno soggettivo e uno oggettivo. Gli impatti soggettivi sono quelli percepiti da, o che riguardano, le persone colpite, indipendentemente dal fatto che un estraneo ritenga tali preoccupazioni realistiche. Gli impatti oggettivi sono quelli considerati importanti da un esperto esterno se o non quegli impatti preoccupano le persone colpite. Molte SIA considerano solo impatti oggettivi. Questo è inappropriato. Esperti esterni spesso ridurranno al minimo l'importanza di quei cambiamenti sociali che sono di massima importanza a chi è interessato da un progetto. Il risultato può essere una valutazione che ignora i fattori più importanti per lo sviluppo dell'opposizione politica o a supporto per una politica (Cramer, Dietz e Johnston, 1980). La definizione si riferisce a un evento. In molti casi l'evento è l'attuazione di una politica e quindi si estende su diversi anni. Diverse fasi della politica possono avere impatti diversi, quindi la SIA deve esaminare i cambiamenti nel tempo. Nel valutare gli impatti di una politica, l'analista può presumere che la politica sarà implementata come proposto o può costruire quello che sembra essere uno scenario di implementazione realistico. La maggior parte degli analisti si comporta come se le politiche fossero seguite con attenzione, così gli analisti tendono a esaminare solo le politiche proposte. Ciò è necessario per una SIA adeguata ma non sufficiente. Poiché la pratica può discostarsi sostanzialmente dalla politica, gli impatti della pratica possono essere molto diversi dagli impatti di una politica ipotetica e perfettamente attuata. Quindi l'analista dovrebbe costruire uno scenario di attuazione realistico e indicare come le deviazioni dalla politica scritta cambieranno gli impatti. Se l'analista lo desidera può limitare la valutazione alla politica proposta, potrebbe fornire prove convincenti che le politiche precedenti sono state attuate come proposte. Tutte le valutazioni riguardano implicitamente gli impatti netti, cioè gli impatti causati dalla politica piuttosto che da ogni cambiamento sociale. Per accertare gli impatti netti, il futuro con la politica deve essere paragonato al futuro senza la politica. Questo può sembrare complicato, ma la pratica della valutazione dell'impatto già avviata negli Stati Uniti con la National Environmental Policy Act (NEPA) richiede la considerazione di un "no progetto" o "continuazione della pratica corrente" alternativa, quindi la valutazione degli impatti netti non si aggiunge alla complessità della



maggior parte del lavoro di valutazione dell'impatto (Dietz, 1987). Questo elemento può essere applicato anche a un livello più basso per le associazioni e richiama l'attuale indicazione caldeggiata dalla Repubblica Italiana.

Attualmente l'approccio EVPA, European Venture Philanthropy Association, risulta ancora il miglior approccio applicabile; le fasi dovrebbero essere evidenti a chiunque legga la reportistica prodotta sull'impatto sociale e richiama gli elementi della SIA theory. L'analisi permette di indagare su diverse fasi al fine di garantire un insieme di informazioni necessarie e complete, la 1<sup>a</sup> fase: prevede l'identificazione degli obiettivi delle varie parti coinvolte nella ricerca della misurazione, oltre che di quelle parti di cui viene misurato il servizio (che cosa si è tenuti a fare e come). Questo permetterà di stabilire beneficiari, risultati, attività e teoria del cambiamento target. La 2<sup>a</sup> fase richiede di identificare i soggetti interessati: chi ci guadagna e chi offre cosa e in che modo; a quale livello partecipano, controllano e contribuiscono alla realizzazione degli obiettivi prefissati e dei risultati e impatti relativi. Gli orientamenti dell'EVPA offrono osservazioni utili sulla valutazione dell'importanza dei diversi soggetti interessati e delle loro esigenze nella definizione delle misurazioni necessarie. La 3<sup>a</sup> fase riguarda la definizione delle misurazioni pertinenti, sulla base della teoria del cambiamento e dei risultati identificati; permette di elaborare una serie di misurazioni che riflettono in maniera corretta e utile quanto è in corso di realizzazione e permette, anche, di determinare chiaramente e semplicemente il modo in cui devono essere presentate tali misurazioni, per rispondere alle esigenze dei soggetti interessati. In questa fase ci si chiede se possono essere semplificate le misurazioni, pur continuando a riflettere i risultati e l'impatto da misurare in maniera pertinente e proporzionata. Dopo le tre tappe volte a definire i risultati, è doveroso selezionare quelli pertinenti e attribuire loro delle misurazioni che riflettano in maniera significativa i risultati conseguiti. La 4<sup>a</sup> fase riguarda il misurare, convalidare e valutare; impone di valutare se i risultati prefissati sono stati effettivamente raggiunti nella pratica, se sono evidenti per il soggetto interessato, destinato a trarne vantaggio e se gli sono utili. Il valore è il guadagno netto per il soggetto interessato, vale a dire i guadagni netti conseguiti, al netto dei costi o sacrifici sostenuti per raggiungerli. La prova che lo dimostra deve essere pertinente per la misurazione, trasparente per i soggetti a essa interessati e proporzionata (in termini di rapporto costi/precisione/dettaglio) rispetto all'uso che ne è fatto. Si tratta di un processo continuo, da intraprendere nel periodo di realizzazione di un intervento sociale e deve essere attuato nei normali sistemi operativi dell'ente. Durante le diverse fasi è necessario individuare input, attività, output, outcomes e impatti. Riuscire a definire ciascun elemento è importante per la mappatura del processo di trasformazione e cambiamento, questo processo di chiama catena del valore Fig 1.

**Fig. 1 scomposizione elementi della catena del valore e impatto sociale**



Esistono attualmente diversi approcci per definire output, outcomes e impact. Ma andando a scomporre la catena del valore possiamo attribuire un significato specifico ad ogni elemento. Gli input sono tutte quelle risorse di diversa natura (denaro, competenze e tempo di individui e organizzazioni, edifici e altri beni fissi come macchinari) impiegate nelle attività, ovvero il lavoro intrapreso utilizzando le risorse con lo scopo di fornire il risultato desiderato (GECES, 2015). Gli output sono prodotti, beni capitali e servizi risultanti da un intervento, ovvero, i risultati immediati delle attività svolte dall'organizzazione. Rientrano tra gli output anche i cambiamenti risultanti dall'intervento che sono rilevanti per il raggiungimento dell'outcome. Gli output sono quindi risultati che l'azienda ottiene nel breve periodo, i cui effetti sono direttamente controllabili e sotto la responsabilità dell'organizzazione stessa. Gli indicatori di output misurano, quindi, la quantità (e a volte la qualità) dei beni e dei servizi prodotti dall'organizzazione (output) e l'efficienza della produzione, risultato di un'azione, di un progetto o di un programma che l'organizzazione mette in atto (OECD, 1991), senza però estendersi all'efficacia dell'intervento, che è invece contemplata nei risultati e nell'impatto. Gli outcome sono gli effetti (cambiamenti comportamentali, istituzionali e sociali) osservabili nel medio-lungo periodo (da 3 a 10 anni) raggiunti o presumibili degli output dell'intervento (azione, progetto, programma). Gli indicatori di outcome misurano, quindi, i risultati intermedi generati dagli output di un programma/progetto/azione, aiutando a verificare che i cambiamenti positivi ipotizzati abbiano davvero avuto luogo (OECD, 1991). Tali risultati vanno quindi oltre la responsabilità dell'azione della singola organizzazione e sono influenzati anche da fattori esterni che devono essere considerati al momento della costruzione degli indicatori (situazione economica e sociale dei beneficiari, eventuali resistenze culturali, ostacoli al raggiungimento degli obiettivi prefissati, ecc.). Per questo motivo gli indicatori di outcome possono essere costruiti a diversi livelli: comunitario, di organizzazione e di programma. Gli indicatori che si costruiscono per il livello comunitario misurano, a seconda dell'ambito di azione dell'organizzazione, i cambiamenti delle condizioni o del benessere della comunità delle famiglie, dei beneficiari del progetto. D'altra parte, gli indicatori costruiti a livello di organizzazione e di programma misurano i risultati fino a dove l'organizzazione, il programma o gli eventuali sottoprogrammi sono responsabili. La definizione di impatto è invece più complessa, come la sua misurazione. Viene infatti definito come il cambiamento sostenibile di lungo periodo (positivo o negativo; primario o secondario) nelle condizioni delle persone o nell'ambiente che l'intervento ha contribuito parzialmente a realizzare, poiché influenzato anche da altre variabili esogene (direttamente o indirettamente; con intenzione o inconsapevolmente). L'impatto viene determinato tenendo in considerazione anche gli esiti di quella che in ambito scientifico viene chiamata "analisi controfattuale", ovvero quella valutazione che permette di verificare cosa sarebbe successo in assenza dell'attività implementata dall'organizzazione (cosiddetta deadweight - Commissione Europea, 2003) e, di conseguenza, la causalità tra l'operato dell'organizzazione e l'impatto generato. Gli indicatori di impatto misurano quindi la qualità e la quantità degli effetti di lungo periodo generati dall'intervento; descrivono i cambiamenti nelle vite delle persone e lo sviluppo a livello globale, regionale e nazionale, tenendo conto delle variabili esogene che lo influenzano (OECD, 1991). Il concetto di catena del valore di Porter (1985), che si basa sull'osservazione che le condizioni specifiche del luogo (piuttosto che i differenziali di costo dei fattori della teoria neoclassica) determinare il vantaggio competitivo di un'attività o politica. L'analisi di Porter sottolinea l'importanza della alternativa locale a condizioni specifiche della domanda. Questo approccio ha avuto una grande influenza sullo sviluppo economico locale e sul pensiero dei cluster e viene richiamato anche per il terzo settore che si trova di fatto di una situazione che richiede un vantaggio e un'analisi di quello che molto spesso può essere percepito come valore pubblico redistribuito sul territorio attraverso il terzo settore (Esposito & Dicorato, 2020). Gereffi (1994) e molti altri hanno coniato il seguente concetto di catena del valore globale attraverso studi empirici

sulla produzione globalizzata in diversi settori dell'economia. Questo approccio coniato per il settore privato differiva dal precedente concetto di filiera per la governance del valore, in questo caso la catena è stata identificata come tema centrale - basato su nozioni sociologiche di potere economico che consentono alle aziende leader di imporre i parametri di contratti e subappalti nella loro catena di approvvigionamento e di conseguenza raccolgono profitti (o rendite) superiori alla media. Nel terzo settore viene pertanto a configurarsi un tema legato alla capacità e concorrenzialità delle azioni dei soggetti non economici verso obiettivi di interesse generale, soprattutto dove con le risorse disponibili lo Stato non riesce ad arrivare. Questo tema e approccio orientato al terzo settore risulta innovativo e caratterizzante di una realtà in evoluzione dove il pubblico si è reso conto dell'importanza delle attività svolte da un soggetto che ha bisogno non solo di regole certe ma anche di un sistema di misurazioni in grado di garantire effettivamente la propria capacità in rapporto agli altri enti del terzo settore, ai trasferimenti pubblici e alla capacità di cambiamento che è in grado di operare nel contesto di riferimento.

### Strumenti, approcci pratici e prospettive future

Se ci si concentra sulla misurazione di impatto sociale esistono diversi strumenti operativi che possono essere adottati dal terzo settore. Nicholls (Nicholls, 2015) suddivide gli approcci esistenti in 3 categorie:

1. quelli basati sugli output, ovvero che si focalizzano sul contesto in cui le attività hanno luogo e sui conseguenti output, piuttosto che sugli outcome;
2. quelli basati sugli outcome positivi e intenzionali, che non considerano cioè (se non secondariamente) gli outcome non intenzionali o fino a che punto gli outcome osservati si sarebbero comunque verificati in ogni caso;
3. quelli olistici, che collegano gli outcome alle attività (causalità) e prevedono un forte coinvolgimento degli stakeholder nella misurazione e valutazione dell'impatto. Un'ulteriore classificazione è fornita da Grieco et al. (2014) che, attraverso un lavoro di ricognizione degli strumenti di misurazione dell'impatto esistenti a livello internazionale che ha osservato un campione di 76 modelli, hanno individuato 4 diversi gruppi di approcci:
  - a. quantitativi sociali semplici (simple social quantitative), modelli basati su indicatori quantitativi;
  - b. complessi olistici (holistic complex), modelli caratterizzati sia da variabili qualitative che quantitative;
  - c. screening qualitativi, modelli basati su variabili qualitative;
  - d. management, approcci che, utilizzando variabili sia qualitative sia quantitative, sono volti a misurare diverse tipologie di impatto ai fini della gestione dell'organizzazione.

Un approccio completo che richiama elementi di SAI theory e strumenti adottabili è stato coniato dalla Camera di Commercio grazie al coinvolgimento del network legato al Torino Social Impact, un'alleanza tra imprese e istituzioni pubbliche e private per rendere Torino uno dei migliori posti al mondo per fare impresa e finanza perseguendo intenzionalmente e congiuntamente obiettivi di redditività economica e di impatto sociale <https://www.torinosocialimpact.it/>. L'approccio è stato richiamato da Biancone & Secinaro (2020) e prevede diverse fasi adottabili proprio agli enti del terzo settore. L'approccio infatti è stato condiviso e insegnato durante un corso di aggiornamento professionale che ha coinvolto Dipartimento di Management dell'Università degli Studi di Torino,

1. Elaborazione del Framework generale che governa i processi valutativi dell'organizzazione, in questa fase è previsto l'allineamento organizzativo con il framework generale degli SDGs e con gli obiettivi delle Politiche di Coesione ed elaborazione del piano di valutazione che l'organizzazione si impegna a conseguire.
2. Elaborazione di una Strategia di Impact Management: Identificazione dei principi guida della strategia di Impact Management e scelta di strumenti per la misurazione degli effetti delle attività svolte dall'organizzazione. Gli strumenti utilizzabili sono Standard per la Misurazione dell'Impatto Sociale (GECES,2014): Principi di Social Value International (2015); Impact Value Chain (Clark et al. 2004); Linee Guida VIS (2019)
3. 3. Elaborazione di una Strategia per gli stakeholder, ovvero la mappatura e il coinvolgimento degli stakeholder chiave per gestire il rapporto tra stakeholder e organizzazione in modo efficiente ed efficace. E' possibile seguire i BSR 5-step approach (BSR, 2012) anche definita matrice degli Stakeholder (NOVO KnowHow, 2017).
4. Allineamento della Governance che prevede l'avviamento di un percorso di riflessione sugli obiettivi, le metodologie e le pratiche valutative in rapporto al sistema della governance. Questo è possibile attraverso le GRI Standards (GRI, 2016): Linee Guida Bilancio Sociale (2019).
5. Elaborazione di un Sistema di reporting e di comunicazione dei risultati attraverso la creazione di un sistema di reporting che risponda ai bisogni di reportistica, di divulgazione esterna e che consenta di monitorare il livello di efficacia ed efficienza delle proprie attività. Per la costruzione è possibile seguire le indicazioni previste dalle linee guida sul Bilancio Sociale (2019) GRI Standards (GRI,2016) o dalle indicazioni fornite per la definizione delle caratteristiche del Bilancio POP (Biancone et al., 2019).
6. Assurance ovvero la definizione di un processo di asseverazione che verifichi la consistenza delle analisi con principi e criteri riconosciuti.

Un'attività divisa in fasi che il terzo settore potrebbe rilevare critico durante l'attuazione e che richiede uno sforzo già durante l'approvazione del budget per definire insieme alle priorità di azione anche strumenti di raccolta e mappatura dei processi associati ai 5 elementi della catena del valore. La riforma del terzo settore sta attraverso strumenti contabili, modifiche statutarie e nuovi obblighi sempre più convergendo verso strumenti di aziendalizzazione privatistica che rispondono sempre più a un'esigenza pubblica di arrivare dove le risorse limitate non lo permettono con una maggiore efficienza ed efficace possibile (Iannaci & Aiassa, 2020; Chiampì, 2020; Amelio & Orlandini, 2020). La molteplicità di attività in cui il terzo settore è coinvolto (Brescia, 2020) e la necessità di non disperdere delle risorse che invece devono trovare una valorizzazione non mappata ad oggi portano all'esigenza, anche per gli enti del terzo settore non obbligati dalla normativa, a valorizzare l'impatto sociale generato. Una valorizzazione che è necessaria per lo Stato, le amministrazioni pubbliche e le Fondazioni Bancarie che erogano risorse al terzo settore con la creazione di valore (Esposito & Dicorato, 2020; Borys & Jemison, 1989). Allo stesso tempo il terzo settore come nelle aziende private soffre di asimmetria informativa tra organizzazione, soci e sostenitori (Borzaga, 1995), un'asimmetria che può essere cancellata attraverso strumenti di rendicontazione sociale con valori di impatto

oggettivi rappresentabili che potrebbe portare anche a una maggiore fiducia (Gui, 1991; Secinaro et al., 2020) e una maggiore raccolta di risorse necessarie a realizzare le diverse attività. Se il cambiamento innestato in Italia trova nelle linee guida della Camera di Commercio possibili approcci per rispondere strutturalmente ai bisogni richiesti dalla SIA theory, è altrettanto necessario indagare in futuro sul costo efficienza del cambiamento richiesto, sulla sistematizzazione della raccolta degli impatti nel terzo settore e sulla formalizzazione teorica di esempi di valutazione di impatto sociale non ancora analizzati scientificamente. Se la crisi economica globale ha richiesto un cambiamento nel terzo settore (Persiani, 2013) la crisi generata dalla pandemia globale legata al COVID-19 non ha fatto che inasprire le difficoltà (Campra, Esposito, & Brescia, 2021) con la necessità di individuare nuovi modelli di approccio; l'indagine di nuove prospettive in un'ottica di miglioramento e innovazione anche organizzativa del terzo settore porterà sicuramente a identificare un modello sistematico di miglioramento e sostenibilità in un ambito già sorretto da volontariato e risorse limitate.

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## **La performance nel settore pubblico tra misure di output e di outcome. Una revisione strutturata della letteratura.**

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### **Abstract**

The paper aims at understanding the state-of-the-art on the performance measurement models in the public sector. Thus, the article highlights the existing studies in the international scenario, critically analyzing the main topics, and drafting the future research lines. A structured literature review has been employed to analyze the papers published in the most famous journals of public management and administration. The results underline a framework summarizing the existing literature in the international scenario. In particular, findings highlight a call to encompass transparency, responsibility, sustainability, and public value in the measurement system, also taking into consideration new types of public organizations, such as the hybrid ones. While some sectors are well investigated, there is the need to deepen the knowledge of certain fields further. In the long run, scholars and practitioners should generate and rethink new integrated performance evaluation models that can cope with the changes occurring in the public sector. Findings provide a shared vision of current research lines, supporting scholars in their future work on new streams.

**Keywords:** performance measurement models, performance indicators, performance, public sector.

### **Abstract**

L'articolo mira a comprendere lo stato dell'arte sui modelli di misurazione della performance nel settore pubblico. Il lavoro riporta un'analisi critica degli studi esistenti nel panorama internazionale, analizzando i principali temi e andando a definire le possibili future linee di ricerca. Una revisione strutturata della letteratura è stata utilizzata al fine di analizzare gli articoli pubblicati sulle più famose riviste di gestione e amministrazione pubblica. I risultati sottolineano un quadro che riassume la letteratura esistente nello scenario internazionale. In particolare, i risultati evidenziano un invito a includere tematiche quali la trasparenza, la responsabilità, la sostenibilità e il valore pubblico nel sistema di misurazione, anche prendendo in considerazione nuovi tipi di organizzazioni pubbliche, come quelle ibride. Sebbene alcuni settori siano studiati in modo approfondito, è necessario ampliare



ulteriormente la conoscenza di altri campi. A lungo termine, accademici e funzionari pubblici dovrebbero ripensare e studiare nuovi modelli integrati di valutazione della performance in grado di far fronte ai profondi cambiamenti che sono in atto nel settore pubblico. I risultati forniscono una visione dello stato dell'arte della letteratura corrente, supportando gli studiosi nella definizione delle loro future line di ricerca.

**Keywords:** modelli di misurazione della performance, indicatori di performance, performance, ente pubblico.

**Doi:** 10.5281/zenodo.4415961

## 1. Introduzione

A livello internazionale, il settore pubblico sta affrontando profondi cambiamenti, dovuti, tra gli altri aspetti, ai vincoli di bilancio, alla crescente domanda di servizi pubblici e sociali (Massaro et al., 2015) e alla sempre maggiore richiesta di trasparenza, responsabilità e sostenibilità (Aureli et al., 2019; Dal Mas e Massaro, et al., 2019; Dal Mas et al., 2019a; Lombardi et al., 2019a; Lombardi, et al., 2019b; Massaro et al., 2014; Pezzani, 2003). Si utilizzano altresì diversi standard di responsabilità, linee guida (Chiarini et al., 2017) e indicatori ad hoc.

In particolare, il trend di studi aziendali sul tema della misurazione delle performance nel settore pubblico appare crescente e sempre più connesso a problematiche di vario tipo, tra cui si annovera, in primis, la creazione di valore per la collettività (Biancuzzi et al., 2020; Dal Mas et al., 2020).

Sebbene da tali cambiamenti possa discendere la distinzione tra modelli di misurazione delle performance basati su indicatori outcome e output (Dal Mas, Massaro, et al., 2019), si intende proporre un approfondimento, in tal senso, del sistema di controllo di gestione in ambito pubblico ai fini della creazione di valore pubblico attraverso gli indicatori outcome.

In questa prospettiva, gli ultimi anni sono stati forieri di studi sulla misurazione delle performance sebbene si riconoscano taluni stream di ricerca di maggiore interesse e utilità, anche attraverso l'introduzione di studi trasversali, come quelli legati alla sostenibilità e trasparenza, per il rispetto dell'accountability aziendale (Campedelli et al., 2017; Fiorentino et al., 2016).

Da qui, il presente articolo si pone l'obiettivo di analizzare i modelli emergenti di misurazione delle performance in ambito pubblico, attraverso l'investigazione specifica degli indicatori outcome, impiegati nell'ambito del controllo di gestione delle organizzazioni operanti in settori come quello sanitario, dell'istruzione e ricerca, della politica e sicurezza.

Il metodo di ricerca applicato nel presente studio è ritenuto più idoneo a raggiungere gli obiettivi della ricerca è quello dell'analisi strutturata della letteratura (Massaro et al., 2016). Riducendo il divario tra teoria e pratica, sono stati selezionati gli studi scientifici pubblicati nei journal più importanti a livello internazionale, riconosciuti nell'area di ricerca della gestione e amministrazione pubblica. Tale scelta origina dalla volontà di attivare un percorso di ricerca più ampio, che possa supportare una comparazione tra Paesi, esportando misurazioni e best practices di vario tipo.

L'articolo si compone dei seguenti paragrafi: nel primo viene proposto il metodo di ricerca utilizzato. Nel secondo paragrafo si esaminano i risultati della ricerca attraverso gli aspetti chiave emergenti. Nella sezione finale sono proposte la discussione e le riflessioni di sintesi sui risultati raccolti.

## **2. La metodologia, il protocollo e le domande di ricerca**

Al fine di raggiungere l'obiettivo della ricerca, il metodo di ricerca impiegato è quello dell'analisi strutturata della letteratura (Bagnoli et al., 2020; Cuozzo et al., 2017; Massaro et al., 2016; Vaska et al., 2020) Si ritiene che tale metodo sia il più adatto per conseguire obiettivi puntuali, nonché consente di sviluppare risultati di ricerca in modo dettagliato e replicabile per futuri studi scientifici passando da una logica descrittiva a una logica interpretativa.

L'impianto metodologico del presente articolo, pertanto si sviluppa attraverso le seguenti fasi: i) protocollo di ricerca e domanda di ricerca; ii) selezione degli studi e ricerca bibliografica; iii) misurazione dell'impatto degli studi esistenti; iv) definizione di un framework analitico; v) affidabilità dell'analisi; vi) validità dell'analisi e codificazione dati.

La prima fase della ricerca è volta a definire un protocollo per l'analisi della letteratura e la domanda di ricerca (i). In particolare, è stato definito un protocollo di ricerca per documentare le procedure volte a sviluppare l'analisi della letteratura e le seguenti domande di ricerca: RQ. Quali sono le principali implicazioni derivanti dall'avvento degli indicatori di outcome nel settore pubblico?

La fase della selezione degli studi e della ricerca bibliografica (ii) si fonda sull'individuazione delle riviste riconosciute nell'area di ricerca della gestione e amministrazione pubblica. Tale scelta si fonda sull'utilizzo dapprima di classifiche delle riviste valide a livello internazionale, per poi proseguire con l'utilizzo di classifiche nazionali, tra cui, nella futura fase di ricerca, quella adottata in Italia. Tale percorso logico consente di supportare un'adeguata comparazione tra Paesi, esportando misurazioni e best practices di vario tipo.

Nell'attuale fase della ricerca, pertanto, si definisce il campione delle riviste usando la classifica della Chartered Association of Business Schools (Regno Unito), filtrando le riviste sia per parole chiave ("outcome" e "performance"), sia per posizionamento nella classifica. Si rileva, tuttavia, il non utilizzo della parola chiave "output" poiché la domanda di ricerca si focalizza sull'utilizzo degli indicatori di outcome sempre più utilizzati nelle organizzazioni pubbliche. In ultimo, la ricerca degli studi pubblicati dalle riviste del campione è stata applicata agli anni 2008-2019 per avere un'ampia panoramica dell'ultimo decennio, includendo una prospettiva anche dell'anno in cui si è completata la presente ricerca. L'analisi dei documenti ha consentito di formalizzare il campione di analisi con 152 articoli pubblicati.

La misurazione dell'impatto degli studi esistenti (iii) per ciascuna rivista è stata rilevata mediante il numero totale di citazioni, le citazioni per anno e la media di citazioni per anno (tabella 1).

**Tabella 1 – Numero totale di citazioni, citazioni per anno e media citazioni per anno**

Journal	Numero totale di citazioni	Numero di citazioni	Media citazioni per anno
Environment and Planning C: Government and Policy	0	0,00	0,00
International Journal of Public Sector	204	47,14	29,14
Journal of European Public Policy	37	10,14	12,33
Journal of European Social Policy	1948	279,46	77,92
Journal of Policy Modeling	46	8,46	11,50
Journal of Public Administration Research and Theory	18	6,00	18,00
Journal of Public Policy and Marketing	22	3,04	11,00
Journal of Social Policy	297	49,94	37,13
Local Government Studies	25	7,75	12,50
Milbank Quarterly	15	3,00	7,50
Policing	1585	264,26	66,04
Policy Studies	391	76,15	26,07
Public Administration	119	26,70	19,83
Public Administration and Development	158	27,97	22,57
Public Administration Review	219	36,56	19,91
Public Management Review	27	27,00	27,00
Public Money and Management	543	110,72	24,68
Social Policy and Administration	187	31,40	18,70

La definizione del framework analitico (iv) si fonda sull'identificazione di nodi prospettici tratti da precedenti studi di analisi della letteratura strutturata (Massaro et al., 2016; Massaro et al. 2015). In questo senso, il primo nodo deriva dalle riviste, autori e anni. Il secondo nodo si fonda sulla giurisdizione del governo. Il terzo nodo riguarda il servizio pubblico fornito. Il quarto nodo riguarda l'area geografica di riferimento dello studio. Il quinto nodo è il metodo di ricerca utilizzato. Il sesto nodo riguarda il framework utilizzato nello studio. Il settimo nodo approfondisce le misure di performance nei settori più analizzati, concentrandosi solo su studi quantitativi che enfatizzino le prospettive di sostenibilità. Il framework si fonda su studi quantitativi in linea con il focus della presente ricerca, oltre che su misure utilizzate per identificare l'output e l'outcome e la fonte dati. Si è giunti, pertanto alla codifica sintetizzata nella tabella 2.

**Tabella 2 – Il framework analitico e i risultati**

Nodo	Variabili	Risultati	Krippendorff's Alpha
Riviste, autori, anni	Articoli	18	1.000
	Anni	2008 - 2019	1.000
Giurisdizione del governo	Sovranazionale	8	5%
	Governo locale	27	18%
	Governo nazionale	18	12%
	Impresa pubblica	1	1%
	Imprese sociali	2	1%
	Organizzazioni di servizi pubblici	69	45%
	Stato regionale	7	5%
	Generale	8	5%
	Altro	9	6%
	Non specificato	3	2%
	Totale	152	100% 1.000
Servizio pubblico	Salute	20	13%
	Centri di educazione e ricerca	26	17%
	Difesa	1	1%
	Polizia e servizi di sicurezza	14	9%
	Welfare	14	9%
	Infrastrutture	0	0%
	Energia, acqua e servizi connessi	5	3%
	Finanza e servizi connessi	4	3%
	Governo e servizi pubblici	15	10%
	Progetti misti relativi a servizi pubblici	6	4%
	Altro	23	15%
	Servizi vari	7	5%
	Non specificato	17	11%
	Totale	152	100% 0.965
Area geografica	Europa continentale	19	13%
	Regno Unito	27	18%
	Australia	5	3%
	Nord America	46	30%
	America centrale e del sud	2	1%
	Asia	10	7%
	Africa	4	3%
	Ambito internazionale	0	0%
	Nuova Zelanda	2	1%
	Unione di più paesi	23	15%
	Russia	1	1%
	Altro	0	0%
	No area geografica	9	6%
	Non specificato	4	3%
	Totale	152	100% 1.000
Metodo di ricerca	Quantitativo (crossover)	50	33%
	Quantitativo (longitudinale)	32	21%
	Caso di studio	23	15%
	Analisi della letteratura	9	6%
	Action Research	0	0%
	Altri metodi qualitativi	8	5%
	Viewpoint	3	2%
	Metodi misti	19	13%
	Interviste	5	3%
	Modeling Tools	0	0%
	Altri	3	2%
	Totale	152	100% 0.975
Framework	Assenza di utilizzo di framework	18	12%
	Applicazione o considerazione di framework esistenti	127	84%
	Proposta di nuovi framework	7	5%
	Totale	152	100% 0.939

L'affidabilità degli studi ( $\alpha$ ) è dimostrata dalla codifica di questi ultimi e dalla relativa discussione tra gli autori. Inoltre, è stato applicato il test di affidabilità "Krippendorff Alpha" (Hayes & Krippendorff, 2007), il quale conferma un risultato superiore al limite fissato con 0,800.

La validità dell'analisi e la codificazione dei dati ( $\alpha$ ) si basa sul controllo degli articoli del campione, al fine di attestarne la rappresentatività rispetto alla letteratura più rilevante. Ad ogni modo, è stato effettuato il controllo dei risultati mediante il metodo pattern matching (Yin, 2014).

### 3. I risultati della ricerca

I risultati del presente studio forniscono una risposta alla domanda di ricerca "RQ. Quali sono le principali implicazioni derivanti dall'avvento degli indicatori di outcome nel settore pubblico?". Pertanto, l'analisi proposta si fonda sullo studio del background teorico, indispensabile a proporre le implicazioni dei modelli emergenti di misurazione delle performance delle aziende pubbliche.

### **3.1. Il background teorico**

Con riferimento ai dati demografici degli autori, è possibile rilevare che i 152 articoli analizzati sono stati scritti da 330 autori singoli. In soli 19 casi sono presenti più autori nell'articolo. All'interno di questo gruppo, il 30% degli autori ha contribuito ai dieci articoli più citati.

L'analisi della giurisdizione governativa e i servizi pubblici evidenzia un maggior interesse per gli enti di servizio pubblico (45%). Il governo nazionale e il governo locale sono spesso oggetto di indagine e rappresentano rispettivamente il 12% e il 18%. Pochi articoli si riferiscono al settore pubblico in generale o non specificano la giurisdizione analizzata.

Per quanto riguarda i servizi pubblici analizzati, esistono diverse aree frequentemente investigate, tra cui la sanità (Provan et al., 2009) e centri di educazione e ricerca (S. C. Andersen & Mortensen, 2009) e welfare (McBeath & Meezan, 2009). Ancora, diversi articoli parlano dei servizi pubblici in generale (Andrews & Boyne, 2012; Aulich, 2011; Head, 2015; Van Ryzin, 2011) e dei progetti misti che coinvolgono diversi servizi pubblici (Aslam & Yilmaz, 2011; Mostafa et al., 2015; Opstrup & Villadsen, 2015).

E' possibile osservare come i servizi e il supporto per le persone bisognose rappresentino argomenti predominanti in molti articoli, anche alla luce del fatto che i servizi alla persona sono questioni critiche nello scenario attuale in più paesi. Molti studi fanno parte delle attività di divulgazione di progetti finanziati.

L'analisi dell'area geografica delle ricerche evidenzia la presenza di aree maggiormente investigate, tra cui il Nord America (46 articoli) e il Regno Unito (27 articoli). L'Italia è analizzata in 2 articoli (Compagni & Tediosi, 2012; Paletta, 2012), l'Asia in 10 articoli e l'Africa in 4 articoli. Esistono 23 articoli che analizzano diversi Paesi congiuntamente: la maggior parte di questi lavori proviene dai risultati di progetti finanziati da istituzioni internazionali. Nella prospettiva di tali evidenze, è possibile sottolineare una scarsa attenzione per alcune aree geografiche.

In questa prospettiva, assumono rilievo gli aspetti culturali sia con riferimento alle organizzazioni pubbliche che offrano la loro disponibilità per studi accademici, sia con riferimento a studiosi che preferiscano scrivere nella loro lingua madre oppure in monografie o riviste nazionali.

L'analisi delle parole chiave è finalizzata a comprendere i temi di ricerca emergenti attraverso la loro frequenza di utilizzo. Le parole chiave sono classificate ed esaminate attraverso la social network analysis (Massaro et al., 2018; Massaro, Handley, et al., 2016; Trequatrinini et al., 2015; Trequatrinini et al., 2017). Precisamente, le parole chiave sono state aggregate in concetti tra cui "Settore Pubblico" che contiene "Pubblico", "Ambito Pubblico", "Organizzazioni pubbliche". Ancora, è stata effettuata l'analisi della centralità dei concetti al fine di individuare quelli maggiormente rilevanti.

Si rileva l'assenza di alcune parole chiave come "strategia" e "imprenditorialità", nonostante rappresentino argomenti di rilievo nell'ambito dei modelli di misurazione delle performance, anche con riferimento al settore pubblico. Le strategie e i modelli imprenditoriali in ambito pubblico assumono connotati particolari, come quelli del terzo settore e delle imprese sociali sempre più rilevanti (Cavenago & Mariani, 2019; Heins & Bennett, 2016). Da qui, si enfatizza la possibilità di intraprendere ulteriori indagini sull'impatto della strategia e dell'imprenditorialità all'interno della sostenibilità del settore pubblico.

L'analisi dei metodi di ricerca mostra una preponderanza per gli studi quantitativi (54%). È interessante notare che i casi di studio rappresentano il 15% degli articoli, mentre le action research

sono completamente assenti. I casi di studio vengono utilizzati in Europa solo in 1 articolo. Gli studi basati sui paesi continentali europei sono principalmente quantitativi. In modo interessante, i risultati mostrano come la letteratura sia fortemente focalizzata su un approccio di tipo “ostensive” con analisi top-down che lasciano meno spazio a un'analisi più approfondita e pratica come, ad esempio, quella basata su studi di tipo “performative”. L'uso di più approcci qualitativi potrebbe aiutare ad accelerare l'applicazione di studi di ricerca tra i professionisti.

Analizzando il framework della ricerca, si rileva che la maggior parte degli studi adotta framework sviluppati in precedenza (84%) e 32 articoli indicano chiaramente il framework di riferimento. La maggior parte degli articoli utilizza più di un framework e non si rileva un framework dominante. Gli indicatori outcome (ed anche output) sono analizzati in modo esplicito in 7 articoli, tra cui Nolte e Boenigk (2011) e Lacey et al. (2012).

Assumendo la prospettiva dei principali settori pubblici, tra cui quello sanitario, dell'istruzione e della sicurezza, si annoverano interessanti risultati della ricerca. Dunque, gli studi del settore sanitario si concentrano sulla fiducia e sulla reputazione organizzativa (Compagni & Tediosi, 2012; Provan et al., 2009) e sull'esperienza del paziente e sulla percezione della qualità del servizio sociale (Foster et al., 2016; Millar & Hall, 2013; Veronesi et al., 2015; Willing, 2016). La maggior parte degli studi su istruzione e ricerca considerano la performance degli studenti come la principale variabile dipendente da analizzare (L. B. Andersen et al., 2014; S. C. Andersen & Mortensen, 2009; Carlson et al., 2013; Herbst & Strawiński, 2016; Mascini & Braster, 2017). Pochi studi analizzano altre variabili come la soddisfazione lavorativa degli insegnanti (Vashdi et al., 2013). Diverse variabili indipendenti sono analizzate per misurare le performance, tra cui l'allocazione delle risorse (S. C. Andersen & Mortensen, 2009), il capitale sociale organizzativo (Compton & Meier, 2016), le regole di corporate governance (Nielsen, 2013).

Con riferimento alla politica e servizi di sicurezza, i risultati mostrano che i tassi di criminalità (Kelman & Hong, 2014), le prestazioni lavorative (Cronin et al., 2017; Gau, 2010; Martinez-Prather et al., 2016; Riccucci et al., 2014) e la soddisfazione lavorativa (Alderden et al., 2017; García-Buades et al., 2015) rappresentano le misure più analizzate come variabili dipendenti. Anche il genere, il clima organizzativo e l'impegno sono alcune delle variabili indipendenti maggiormente analizzate.

### **3.1 Le implicazioni emergenti nel modello di misurazione delle performance**

In funzione dell'analisi descrittiva proposta in precedenza, è possibile applicare, nell'ambito del protocollo di ricerca (Massaro et al., 2016), un approccio interpretativo volto a fornire talune implicazioni nell'ambito del modello emergente di misurazione delle performance in ambito pubblico.

In questa prospettiva, pochi autori producono la maggior parte degli articoli pubblicati; molti autori contribuiscono con una sola ricerca. Alcuni servizi pubblici e aree geografiche sono meno investigati di altri. Infatti, l'analisi della letteratura mostra come vi siano aree geografiche maggiormente investigate ed altre meno investigate. Questo apre molte nuove opportunità e percorsi di ricerca, lasciando spazio per sviluppare studi comparativi in aree più mature e per approfondire situazioni meno investigate.

È interessante notare, altresì, che l'analisi sulle parole chiave evidenzia l'assenza di concetti come "strategia" e "imprenditorialità". E' possibile fondere tali argomenti emergenti nell'area di studio della sostenibilità nel settore pubblico, proponendo avanzamenti per sostenere preoccupazioni e pratiche sostenibili (Dal Mas, 2019; Dal Mas, et al., 2019; Lombardi, 2019; Lombardi et al., 2019b;

Maglio et al., 2019; Lozano et al., 2012). In particolare, consideriamo la sostenibilità come uno degli argomenti più rilevanti per il settore pubblico. Pertanto, il concetto di sostenibilità, il suo significato e attività rappresentano un contributo importante rispetto alle dimensioni sostenibili, generando impatti positivi non solo nel sistema organizzativo e sul rendimento e le misurazioni delle prestazioni, ma anche sull'ambiente e sulle società.

Ancora, solo alcuni articoli forniscono una definizione generale di indicatori outcome (ed anche di output), anche se vengono forniti diversi esempi pratici. La frammentazione della letteratura suggerisce che c'è spazio per sviluppare un framework comune verso un modello di sostenibilità integrata efficace.

L'attenzione agli studi analizzati consente di rilevare l'esistenza di un invito a focalizzare la ricerca su misure di outcome e sostenibilità orientati al lungo periodo. La maggior parte degli studi si concentra, infatti, su outcome a breve termine, invece di concentrarsi sui risultati di lungo termine. In questo modo, sarebbe possibile stabilire un adeguato sistema di valutazione delle performance che abbia le sue radici in un nuovo modello di misurazione delle performance integrato e sostenibile, utilizzato dalle organizzazioni del settore pubblico. La proposta di costruire un modello integrato di misurazione delle performance a supporto della sostenibilità aziendale può essere indirizzata ad aumentare l'efficienza e l'efficacia degli indicatori specialmente di outcome, salvaguardando l'ambiente e la società.

In ultimo, si rileva l'invito a sviluppare più studi performativi. La maggior parte degli articoli analizzati utilizza approcci trasversali o longitudinali quantitativi. Tali metodi di ricerca sono più difficili da comprendere da parte di chi non appartiene al mondo accademico e non ha alcun background statistico / matematico. Sono realizzati pochi casi di studio e esiste un invito ad analizzare l'ontologia applicata, allargando il framework dominante e lasciando spazio ad altri approcci.

#### **4. Prime riflessioni conclusive e futura ricerca**

Il presente studio propone lo studio dei modelli emergenti di misurazione delle performance in ambito pubblico, attraverso l'investigazione specifica degli indicatori di outcome, utilizzati nell'ambito del controllo di gestione delle organizzazioni operanti nei principali settori come quello sanitario, dell'istruzione e ricerca, della politica e dei servizi sicurezza. Attraverso l'analisi strutturata della letteratura, ci si è posti l'obiettivo di colmare il divario tra teoria e pratica, selezionando gli studi scientifici pubblicati sulle riviste più importanti a livello internazionale, riconosciute nell'area di ricerca della gestione e amministrazione pubblica. In questa prospettiva, l'analisi svolta finora risponde alla domanda di ricerca: RQ. Quali sono le principali implicazioni derivanti dall'avvento degli indicatori di outcome nel settore pubblico?

Alla luce dell'analisi svolta sin ora, fornendo una risposta alla domanda di ricerca, la letteratura analizzata secondo i criteri del protocollo di ricerca appare frammentata e orientata verso un approccio "ostensive". Molteplici aree geografiche risultano poco indagate dagli studi analizzati e, allo stato attuale, non è possibile definire un framework universalmente valido.

Il risultato della nostra analisi, quale primo step di un lavoro di ricerca più ampio, si propone di introdurre l'analisi delle pratiche sostenibili, verificando l'impatto sugli indicatori di outcome per le organizzazioni pubbliche. Si evidenzia la volontà di proseguire l'analisi sulla sostenibilità ambientale rispetto a quelle inerenti la salute, l'istruzione e la ricerca, i servizi politici e di sicurezza, il welfare, i servizi pubblici e il governo. In questa prospettiva, si propone l'affermazione di un modello integrato di valutazione delle prestazioni, adottato dalle organizzazioni del settore pubblico e si invitano gli

studiosi ad approfondire ulteriormente tale tema alla luce dei profili emergenti legati alla sostenibilità. Inoltre, rileva la necessità di ulteriori indagini orientate a valutare le performance in termini sia di output ma soprattutto di outcome anche nelle cosiddette organizzazioni ibride, formate sempre più spesso da partnership tra pubblico, privato e/o terzo settore (Amelio & Orlandini, 2020; Campra et al., 2019; Secinaro, Brescia, et al., 2019; Secinaro, Corvo, et al., 2019).

La richiesta di aumentare l'efficienza e le misure di efficacia nel settore pubblico rappresenta un argomento rilevante all'interno e all'esterno delle organizzazioni di difesa personale, governance, ambiente e società a lungo termine. La maggior parte degli studi si concentra su outcome a breve termine. Pertanto, si ravvisa la necessità di porre maggiore attenzione ai risultati che discendono dalle azioni operate dalle organizzazioni pubbliche, adottando una visione lungo termine.

Da qui, appare di estremo interesse l'analisi dei continui cambiamenti nel settore pubblico, con la crescente richiesta di trasparenza, responsabilità e sostenibilità, confermando la creazione di valore pubblico. In particolare, si conferma un trend crescente di studi aziendali sul tema della misurazione delle performance nel settore pubblico (Charbonneau et al., 2015; Minoja & Romano, 2021).

Sebbene il presente articolo non sia scevro da limiti, i risultati proposti contribuiscono al dibattito aperto su tali tematiche, offrendo ulteriori opportunità di ricerca, soprattutto nella direzione della sostenibilità, per la salvaguardia della collettività e dell'ambiente, e della trasparenza nel settore pubblico, per l'accrescimento dell'accountability e della creazione di valore pubblico.

Ulteriore limite dell'articolo discende dalla mancata focalizzazione della letteratura su normative che impongono l'uso di metriche di output e outcome con un approccio country-based, oltre che su ulteriori misure derivanti da altri ambiti organizzativi diversi.

La futura ricerca è diretta a colmare i limiti enunciati poc'anzi e a proporre una visione dei modelli emergenti di misurazione delle performance nel settore pubblico che possa includere ulteriori journal classificati secondo criteri addizionali e diretti a rappresentare altri paesi, tra cui l'Italia. Inoltre, s'intende analizzare i modelli emergenti di misurazione delle performance in ambito pubblico alla luce dei principi della sostenibilità e trasparenza, anche nell'ottica degli studi esistenti country based nei più importanti paesi europei. Tra questi, l'Italia rappresenta una realtà rilevante per l'analisi dei modelli emergenti di misurazione delle performance in ambito pubblico, potendo annoverare tradizione e innovazione, esperienza e best practice rinvenibili nella pipeline di studi, nella prassi e nella realtà operativa.

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## **Effect of concept mapping strategy in teaching and learning economics and academic performance in higher secondary school**

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### **Abstract**

Economics can be taught and learned better when different teaching strategies are used appropriately. Concept mapping is one of the teaching strategies used in teaching economics. This study investigates the effect of using concept mapping in teaching and learning economics and the academic performance of students. The study was carried out with 35 students of class eleven at one higher secondary school under Thimphu Thromde, Bhutan. The study adopts a mixed method. The quantitative data was collected through the Autumn class test (pre-test) and class test (post-test). The pretest and posttest data were analysed and interpreted using descriptive statistics via mean, standard deviation, and inferential statistics via t-test and level of confidence and statistical significance. The qualitative data collected through observation of group works and presentation, and group reflective journals were analysed by coding and thematic analysis was drawn to analyse the data. The findings showed students have a positive opinion towards concept mapping. Concept mapping helps students to understand and remember economic concepts and enhances descriptive ability. The study revealed that concept mapping enhanced the academic performance of students if used systematically. However, the finding also revealed that all economic lessons cannot be taught through concept mapping.

**Keywords:** Teaching and learning, concept mapping, economics, student

**Doi:** 10.5281/zenodo.4415971

### **Introduction**

Various studies done on Bhutanese education have pointed out the need to address issues on the quality of education (GNHC, 2019). The diagnostic standardized test conducted by the Royal Education Council & Education Initiatives Private Limited (2008) in 18 schools for class V, VII, and IX in Science, Mathematics, and English revealed that student was unable to perform basic numeracy and literacy tasks and their learning outcomes were below the minimum expectations of their grade levels. The majority of students were unable to understand core concepts and apply knowledge in real-life situations. Students were found making simple mistakes in questions related to procedural learning and application. Most students fail to relate what they have learned to their environment. The Education Sector Review Commission (2008) revealed that there was high primary school grade repetition. Students were not able to master their curriculum within the prescribed time. The World Bank (2007) as cited in (Ministry of Education [MoE], 2014) found that the overall rate of learning was low in grade levels II and IV of primary schools of Bhutan.

Similarly, the Program for International Student Assessment for Development (PISA-D) 2018 in Bhutan revealed that students, in general, have higher success rates in items of acquiring lower cognitive skills. There is a significant gap in performance in more demanding tasks. Bhutanese students have performed at par with top PISA-D countries but significantly below the OECD average (BCSEA, 2019). The researcher strongly believed that the lower rate of learning in lower classes has a direct impact on the higher classes. The MoE (2014, p. 29) outlined that "the overall performance of Bhutanese children is challenged in meeting not only the international standards but also of the national standards". Several studies revealed shortcomings in learning outcomes, skills, and teaching-learning practice (GNHC, 2019). Therefore, teachers need to use student-centred teaching and learning, assessment approaches, classroom practices to promote understanding in all students (MoE, 2014; Dorji, 2018).

Over the years, there has been a change in the delivery of lectures from a mere talk or one-way teacher transmission to student-centred teaching and learning. Teaching, focused more on students, collaboration, reflection, and group discussion makes students think critically. Teaching becomes more interactive and rewarding (Dorji, 2020). The same issues have also been discussed and validated in the Bhutan Education Blueprint 2014-2024 (MoE, 2014). Providing quality education is critical for furthering the progress of human development in the country (Planning Commission of Bhutan, 2007). To make learning meaningful, there is a need to adopt an effective teaching strategy. Concept mapping is one strategy among others to improve the quality of classroom instructions. The concept mapping is found more valuable than traditional lecture teaching strategy (Alhomaidan, 2015). Concept mapping makes students visualize the relationship between concepts in a systematic way. According to Jibrin and Zayum (2012) students taught using concept mapping strategy achieved higher academic achievement than those students who were taught using the expository method. Similarly, in one study by Chiou (2008) on the effect of concept mapping on students learning achievements and interest revealed that students who were exposed to concept mapping performed better than those students who were not exposed to concept mapping.

According to Dorji (2020) in the Bhutanese classroom setting teachers used individual activity, group activity, lecturer cum demonstration, and PowerPoint presentations. Problem-solving, cooperative learning, experiential learning, student research, role play, concept mapping, differentiated learning, simulation games, project-based learning, team teaching, and co-teaching, learning through feedback, live consultancy assignments were not used by teachers in the classroom teaching. There is a long history of teacher resistance to pedagogical changes in Bhutan (iDiscoveri Education & REC, 2009; Sherab, 2013; Gyamtsho, Sherab & Maxwell, 2017).

This study was carried out in one higher secondary school under Thimphu, Thromde. There were 74 teachers, 9 non-teaching staff, and 6 supporting staff. The school is a co-educational day school with an enrolment of 1813 students (850 boys and 863 girls) ranging from classes PP to XII. The school offers science, commerce, and arts streams. The school and students are striving for academic excellence although the outcome of class XII board examinations was not encouraging and satisfactory despite collective commitment, hard work, and efforts initiated by the school. Currently, the researcher teaches economics in classes XI and XII. Economics requires a lot of effort to understand and remember concepts, facts, and ideas (Dorji, 2018). The researcher has seen many students scoring low marks in economics in Bhutan Higher Secondary Education Certificate Examination.

The researcher believed that an effective teaching strategy is the bedrock of effective learning. The quality of teaching strategy has a direct relation to the quality of student performance.

To make students learn effectively, the teacher should adopt the right teaching strategy (Yadav, 2006). The poor academic performance in higher classes could be due to inappropriate teaching strategy or shallow knowledge of the subject used in the classroom. Therefore, the teacher needs to identify teaching strategy for students to relate, interact and share their ideas and interact academically (Jibrin & Zayum, 2012). After going through a literature review the researcher felt necessary to carry out a study on teaching and learning economics through concept mapping. According to Tenzin (2005) concept mapping enables both students and teachers to use visual perception in learning and remembering economic concepts, facts, ideas, theory, etc., (Tenzin, 2005). The teaching and learning become meaningful if there is a formation of variable relationship better concepts, ideas, and facts (Cliburn, 1990).

This study intended to try out the concept mapping as an intervention program in teaching and learning economic and assess how such practices helped students improve their learning and academic achievements. The literature shows concept mapping is used to teach and learn concepts, facts, and ideas in the context of cross-cultural teaching and learning.

### **Objective of the Study**

So far, no study was carried out on the effect of using concept mapping as a teaching strategy in the Bhutanese classrooms. The aim objective of the study was to examine the effect of using concept mapping in teaching and learning economics and student academic performance.

### **Research Question**

Based on the objective of the study, the following questions were asked:

1. What are the effect of using concept mapping in teaching and learning economics and student academic performance?
2. What are the views and opinions of students towards the teaching and learning economics through concept mapping?

### **Significance of the Study**

This study can be a powerful strategy that can be used by teachers to study their pedagogical practices and implement interventions to improve their pedagogical practices (Choeda, Drukpa, Yuden, Dukpa & Chuki, 2018). Evidence from this study has the potential to encourage other teachers to adopt concept mapping as one of the popular teaching strategies in teaching and learning. According to MoE (2020) the implementation of Bhutan Professional Standard for Teachers requires all teachers in Bhutan to adopt student-centred teaching practice.

### **Literature Review**

#### **What is concept mapping?**

The concept mapping was first explored by Joseph Novak and his research team at Cornell University in 1970. Joseph Novak and his research team describe concept mapping as graphic means of expressing scientific concepts to students. A concept map is a graphical representation of the relationship among terms (Vides, Yin, Tomita & Primo, 2005). Concept mapping is a schematic device for representing a set of concepts embedded in a hierarchical diagram (Novak & Godwin, 1984). Concept mapping helps students connect terms and visualize relationships between concepts in systematic ways. According to NCERT (n.d. p.181)

concept mapping is a technique of linking different concepts to visualize the relationship between them. Here different concepts are shown by means of suitable figures and then they



are joined with arrows or lines. The lines can also be associated with suitable phrases like 'goes to', 'comes out', 'added to', etc. However, it is not compulsory to associate the lines with such phrases. The main idea is to make the reader understand what a particular line means.

The concepts linked by their connection through means of arrows are called propositions. Alhomaïdan (2015) describes a concept map as a visual way of representing knowledge in which concepts, relationships, and propositions exist. Concept mapping is a kind of visual road map connecting the meaning of concepts. "Concept mapping is a means of organizing ideas" (Bybee, Powell and Trowbridge, 2008. P. 135). Concept mapping is based on the approach of constructivism. The constructivists strongly believe that students actively construct knowledge. It is a good way of learning by doing (Esler & Esler, 1989) and learning with understanding. Bybee, Powell and Trowbridge (2008) outlined that concept mapping can be used in assessment and lesson planning, note-taking, assessing student misconception, as a means of self-reflection on student learning and self-study as well. After the completion of a lesson, a schematic summary of what was learned and understood can be outlined through concept mapping.

### **Psychological foundations of concept mapping**

The concept mapping is strongly supported by Piagetian theory. According to psychologists, real learning is not filling up the storehouse of the brain by rote learning. Real learning takes place by the interaction of information inputs with existing knowledge through different parts of the brain. The construction of a concept map activates the function of the brain. The construction of different concepts is related to each other (NCERT, n.d). Psychologists hold a strong belief that concept mapping facilitates learning in two ways by acquiring related images faster and retaining images for a longer period. The retention of visual images becomes longer.

### **Use of concept mapping in teaching Economics**

In economics, students need to understand the relationship between abstract concepts. Since many students were studying the subject for the first time in class XI in researcher school, the student felt difficult to learn abstract concepts and to understand the relationship between them. Concept mapping is one of the effective tools in learning abstract concepts and also to understand the relationship between abstract concepts (NCERT, n.d; Tenzin, 2005).

### **How to develop a concept map?**

- (i) The first step to develop a good concept map is to decide about the domain. One has to decide about what should be the subject matter of the concept map which is going to be created.
- (ii) The next step is to set a good focus question. Here it should be decided what one is going to establish or show using the concept map.
- (iii) After this it is better to have a rough sketch showing how the different key concepts are to be placed and related.
- iv) Different key concepts are to be labelled at different places with different symbols or figures.
- v) Concepts are then linked with arrows and/or linking words or phrases.
- vi) For a good understanding of the relationships between the sub-domains of the map, it may be necessary to crosslink different concepts.

- vii) Finally, the concept map should be revised to give better look and to make better meaning (NCERT, n.d. p.183).

According to Bybee, Powell and Trowbridge (2008) concept map can be developed as: (i) Students should identify major and minor concepts of a topic under the study, (ii) Student will organize concepts in hierarchical relationships. (iii) During the analysis of the concept map produced by students, the teacher needs to look at the concepts that are related to the topic, (iv) Concept map should show a hierarchical relationship from simple to complex. (v) Assessment should be subjective in nature. A bigger picture of student understanding of the topic should be ascertained. Similarly, Dorttepe and Arikan (2019, p.161) highlight the process of concept mapping as consisting of “preparation, generation of statements, structuring of the statement, representation of statements, interpretation of maps and utilization”.

### **Types of concept map**

According to NCERT (n.d); Dorttepe and Arikan (2019) there are different types of concept map: (i) Hierarchical, (ii) Cyclical, (iii) Chain and (iv) Spider map or network. There are differences of opinion on what type of concept map is more beneficial for teaching and learning (NCERT, n.d). In the initial stage, Hibberd, Jones and Morris (2002) as cited in NCERT, (n.d.) strongly supported the hierarchical concept map for teaching concept abstracts. On the other hand, Safayeni, Derbentseba and Canas (2003) as cited in NCERT (n.d) supported favour of a cyclical type of concept map. However, the type of concept map doesn't matter as the choice of concept map solely depends on the comforts of teachers and students in teaching and learning.

### **Difference between concept map and flow chart**

Unlike flow charts, in concept mapping, concepts are expressed in the proposition by using linking words or arrows. The linking words or arrows describe the concepts, relationship with other concepts through hierarchical and cross-linking arrows or lines (Cliburn, 1990; Tenzin, 2005). The arrowhead brings the senses or direction of relationships.

### **Advantages of concept mapping**

Concept mapping is a valuable tool in teaching and learning. A concept map is used to communicate complex ideas, summarize information, and facilitate learning process (Alhomaïdan, 2015). A study of 23 EFL students (as cited in Alhomaïdan, 2015,) found students who were taught economics concepts using concept mapping learn better and perform better than the students who were taught concepts without using concept mapping. Cliburn (1990) outlined retention of concepts is higher when learning is done with understanding. Students understand and remember concepts for a longer period. Similarly, Fahim and Hiedar (2006) found a positive relationship between concept mapping and listening comprehension of students. As students construct a concept map, students relate new knowledge with existing or prior knowledge. Marriott and Torress (2008) as (cited in Alhomaïdan, 2015) suggest that concept mapping is useful for the development of oral, reading, and writing skills. Students tend to learn more, better, and retain longer when students see or write a concept rather than the concept is taught through rote learning (NCERT, n.d). Concept mapping abstractly promotes reflective thinking with deeper understanding through the picture (Tenzin, 2005). The chalk and talk method cannot promote reflective thinking and contribute less to the knowledge structure (Dorji, 2020).

Using concept mapping in a teaching and learning process breaks the monotony of lectures and lessons become lively, interesting, and insightful. Some of the advantages of concept mapping according to NCERT (n.d., p.184-185) are (i) a well-constructed concept map helps students understand the relationship depicted in it. (ii) Concept mapping organizes the knowledge systematically and helps students define and explain different concepts and the relationship amongst them. (iii) As the students get to create, learning becomes interesting and fun. (iv) Concept maps also help a teacher to identify where the student's learning gaps. A wrong arrow or a wrong phrase easily reflects the problem area of the students. (v) Concept mapping can also be used to evaluate the student's level of learning. According to Bello and Abimbola (1997) concept mapping is one strategy which makes teaching and learning meaningful and students become independent in the learning process.

### **Methods**

The study adopts a mixed method with a quantitative approach at beginning and followed by qualitative and quantitative approach (Cresswell, 2014). The quantitative data was collected through the Autumn class test (pretest) and class test (posttest) to evaluate the effect of the concept mapping. The qualitative data was collected through the observation of group work and group presentation and students' group reflective journals. The qualitative data were analysed using the process of emerging themes.

### **Population and Sample**

The study was carried out with 35 students (11 boys and 24 girls) in class XI. Out of 35 students, 11 boys and 19 girls had not taken economics in class IX and X. They were studying economics for the first time in class XI. The chapter 'Demand' was chosen to examine the effect of concept mapping strategy. 20 periods of 45 minutes were allocated for the study.

The researcher briefed the purpose of the study to the students. Study approval was obtained from the school management. Consent was also obtained from all students and confidentiality was assured. All students participated in the study.

### **Quantitative Data Collection Instrument**

#### **1. Autumn class test (pre-test)**

The baseline data was collected through Autumn class test conducted on September 25, 2019. The objective of Autumn class test was to determine the level of knowledge that students owned before the implementation of concept mapping as an intervention program. The twenty marks of short essay type questions covered after the midterm examination were prepared. The 20 marks were later converted into 100 marks for easier tabulation. The writing time of the Autumn test was 40 minutes.

#### **2. Class test (posttest)**

After the Autumn class test, the first chapter 'Demand' in class XI was taught by incorporating concept mapping strategy because the class XI economic syllabus was completed. After the completion of the chapter class test was conducted on November 15, 2019, to assess the student's level of academic performance in economics after using concept mapping as an intervention program. The class test consists of similar questions carrying the same marks with the same writing time as the Autumn class test. The class test was also used to examine and compare the students' level of academic performance between the Autumn class test and class test.

### 3. Group Work and Group Presentation

During the lesson, group work and group presentations were assigned to seven groups consisting of five members each. The objective for administrating group work and group presentations was to investigate and examine students' interest and participation in group activities and their level of understanding during the three-week intervention program.

### 4. Student Group Reflective Journal

The seven groups were asked to write a reflective journal about how they felt, experienced, and learned the chapter 'demand' through concept mapping. The purpose of writing the reflective journal was to find out the views and opinions towards learning economics and academic performance through concept mapping. The group reflective journal also provided information to the researcher on how students have progressed with concept mapping. Journal promote reflective thinking and generate further questions among students (Bybee, Powell & Trowbridge 2008).

### Data Analysis

The quantitative data collected through pretest (Autumn class test) and posttest (class test) were analysed using SPSS version 24. The descriptive statistics via mean and standard deviation and inferential statistics via t-test, statistical significance, and level of confidence were determined.

Qualitative data collected through group work and group presentation and student group reflective journals were analysed by using the coding system. After coding, themes were generated (Choeda, Drukpa, Yuden, Dukpa & Chuki, 2018). Quantitative and qualitative data were triangulated to confirm results and discussion.

## Results and Discussion

### 1. Comparison of Autumn class test and class test

The analysis of the Autumn class test and the class test revealed a significant difference between the two means. The mean of the class test was higher than the Autumn class test as shown in Table 1. The mean difference between the class test and the Autumn class test was 17.18. Table 1 supports that concept mapping has a positive impact and using it systematically could improve teaching and learning economics. The Autumn class test scores revealed that most students had a weak understanding of economics. However, the improvement of the class test score proves that concept mapping has positively affected learning economics. There is a statistically significant difference between the Autumn class test and class test.

**Table 1**

Comparison of pretest and posttest score

Test	N	Mean	Std. Deviation	Test Value=0				
				T	Df	Sig. (2-tailed)	95% Confidence Interval of the Difference	
							Lower	Upper
Autumn Test	35	45.79	16.536	16.381	34	.000	40.11	51.47
Class Test	35	62.97	14.460	25.763	34	.000	58.00	67.94

The analysis of the group work revealed that initially, students were not aware of concept mapping. Students were confused between the flow diagram and concept mapping. After three sessions/lessons, students understand what is concept mapping. The researcher observed that all students in the group participated in the group work and showed keen interest in group presentations. Students also clarified their doubts. Overall, the researcher found students enjoying economics taught through concept mapping.

The analysis of student group reflective journal (using the content or thematic analysis) revealed the effect of concept mapping on students' learning in the following five major themes:

### **1. Descriptive ability**

The student participants found that the concept mapping strategy useful in improving descriptive ability. Four groups mentioned that "concept mapping is mainly done by mentioning all the important points about a particular concept or topic and later students can supplement with additional information. Students were able to describe more about the topic or lesson taught in the classroom through visual means.

### **2. Retention power**

Concept maps are important to promote learning with understanding. Student participants mentioned that concept maps helped students remember concepts for a longer period. Memory retention becomes higher when learning is done by doing and understanding. Five groups mentioned that concept mapping help students in improving sentence structures and grammar skills by describing the key points. Through concept mapping, students were able to understand the concepts in more detail. As students construct concept maps, students might attempt to relate new knowledge to their existing knowledge.

### **3. Confidence**

Through group work and group presentations, students gained confidence as they presented their group findings to the whole class. It was observed by all that concept mapping is a platform for brainstorming. Student participants found that learning economics through concept mapping enhances students to communicate new ideas. Five groups mentioned that concept mapping was a great way to build knowledge upon previous knowledge by connecting new information. The students were passionate about learning new lessons and it broadened their knowledge.

### **4. Participation**

All students agreed that there was active participation among the group members. The group discussed and asked questions related to lessons taught in the class. All students actively participated throughout the lessons. Five groups mentioned, "we enjoyed learning concepts, facts, and ideas through concept mapping. It makes us active and learning somewhat became fun and interesting".

### **5. Test score**

All group members mentioned that concept mapping saves time for students to revise lessons and prepare for the examination. During revision, students can read text linking concepts or study links between concepts. Six group members mentioned that a concept map makes it easier to recall the lesson or topic and review the information presented in the class. All groups also mentioned that concept mapping helps them to score more marks in tests.

The results and discussion were found consistent with the study done by Chiou (2008);

Jibrin & Zayum, (2012); Alhomaïdan, (2015). The results and discussion conclude that concept mapping enhanced teaching and learning and student academic achievement as concept mapping allowed students to involve directly and actively in the teaching-learning process (NCERT, n.d.).

### **Reflection of the Study**

Through group work and group presentation, the researcher has learned that there were a variety of ways of representing lessons through concept mapping. Unfortunately, the research found few students were memorizing concept map or copying concept map from the group members. The researcher felt that it was important for teachers to note and discourage students from memorizing concept maps or copying concept maps from groups or friends. The main purpose of using concept mapping strategy was to promote learning through understanding and deemphasize rote learning. Students can revise the lesson or prepare examinations by linking text with important concepts or study links between concepts.

The researcher felt that teachers need to plan group activities and supervise group activities properly. Teachers as facilitators should facilitate students' learning. Students should be encouraged to reflect upon concept mapping and promote meaningful learning or learning with understanding. Although students found concept mapping very useful, the researcher observed that the concept maps are not easy to constructs and teachers should encourage students to persevere before students master the concept mapping techniques. On a few occasions, the researcher found some students knew more about a lesson and students illustrated concepts with many links for the lesson. In such a situation, a teacher should interfere and remind what students need to do to meet the learning objective of the lesson. With the start of concept mapping, the research saw positive behaviour towards teaching and learning. Concept mapping strategy enhanced interpersonal relationships, confidence, and shared responsibilities between students.

A teacher should give hands-on or minds-on or hearts on activity to students on the many aspects of a topic or chapter to prepare charts with clear concepts, ideas, and theories. Such activities present the potential to trigger and arouse more interest in the subject. During group presentations, the researcher observed that concept maps could be prepared in PowerPoint presentations for an easy demonstration to the class. It could even be better if students can prepare concept maps on a computer using concept mapping tools to make their concept clear, colourful and presentable. Due to the shortage of computers and projectors in the current school, the students had to work with charts and chalkboard. The researcher believes that the use of concept mapping will not only help teachers to teach but also the young students to learn difficult topics and concepts better and with fun. However, not all concepts, facts, ideas, and theories can be taught through concept mapping.

### **Conclusion and Recommendation**

The current study was the first study on the effect of concept mapping strategy in teaching and learning economics and academic performance in higher secondary school. Evidence from the study showed that concept mapping has positive effects on teaching and learning economics. It promotes student-centred teaching and learning. The study showed that concept mapping enhanced descriptive ability, understand and remember concepts longer, build confidence, promote participation, and improve test scores. The researcher recommends other economics teachers to use concept mapping in their teaching and learning process. From this study, the researcher concluded that concept mapping strategy is effective in teaching and learning economics in higher secondary school. It enhanced the academic performance of students.

Although teaching economics is a challenging job, teachers can modify teaching strategies by incorporating concept mapping strategy to suit the diverse learning needs and interests of students. The Bhutan Professional Standards for Teachers (MoE, 2020) requires all teachers in Bhutan to practice such strategies that take into account the backgrounds of learners, use of information technology and adopt student-centred teaching strategies.

However, the study found that teachers should discourage students from copying concept mapping or memorize concept maps for examination. Concept mapping is a strategy to ‘de-emphasize rote learning’ or to promote ‘learning through understanding. There is also a note of caution for all teachers while using concept mapping in the teaching and learning process. Teachers need to remind the objectives of the lesson so that the right objectives are achieved within a specified time. The teacher needs to share the expectation with students. While constructing the concept map sometimes a student can easily forget the objective of a lesson. As a result, a student might lose the path by getting involved in useless drawings and lose their path. Therefore, the teacher should develop an idea beforehand about what the teacher expects from students. The teacher needs to remain vigilant in the class to guide students to achieve the right objective within the stipulated time. The teacher should give hands-on or minds on or hearts on activities to students to prepare concept maps on charts or a computer with clear concepts and arrows.

### **Limitation of the Study**

The construction of a concept map never ends. The use of computer software, like Excel, PowerPoint, plays an important role in constructing a concept map. Therefore, future research in the same field can try to use Microsoft Excel and PowerPoint to construct concept maps.

The researcher also recommends other researchers to replicate the same study in their schools with a longer intervention period and make a comparison. It is also recommended that the Colleges of Education can find out the effects of concept mapping in teaching and learning for pre-and in-service teachers.

It is also important for the teacher to know that there is no best teaching strategy for an effective teaching and learning process (Yadav, 2006; Cohen, Manion, Morrison & Wyse, 2010). Each student comes with some uniqueness in background, interest, and needs, therefore, different teaching strategies are a must and necessary in the classroom (NCERT, n.d). Students may vary in several ways according to their learning preferences.

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## **Technology Acceptance by University Teachers: A Demographic Analysis**

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### **Abstract**

Teaching processes have been evolved over centuries by adopting new approaches, methods, tools, and technologies. Teachers must carefully use, evaluate, and adopt the changes to utilize these technologies for teaching. Prime focus of this study was to explore technology acceptance by university academics and to analyze it with demographic characteristics. Mixed method approach using sequential explanatory design was employed for collection of data. Population of study was comprised of university teachers around the Pakistan. Sample of 300 teachers was selected by employing proportionate stratified random sampling and 20 teachers were selected for conduct of interviews. Five point likert scale questionnaire was developed for quantitative data collection. Validity was ensured through experts' evaluation and pilot testing. Internal consistency and reliability of questionnaire items was checked through Cronbach's alpha and found 0.83. Researcher himself visited target audience for data collection. Data was analyzed through SPSS with arithmetic means, standard deviation, ANOVA, t-test and post-hoc multiple comparisons. Salient findings revealed that male teachers were significantly better in technology acceptance than their female counterparts; a significant and strong positive relationship was observed between technology acceptance and demographic characteristics of teachers. Technology Acceptance by university teachers was significantly less. It was recommended that the female teachers must be imparted training regarding effective use of technology and customized trainings must be conducted to enhance technology usage at university level.

**Keywords:** Educational Technology, Acceptance, Adoption, Higher Education, Academics

**Doi:** 10.5281/zenodo.4416005

### **1. Introduction**

Since teaching learning processes have been revamped completely and use of technology in classrooms has gained momentum around the world. Integration of technology in teaching is

considered, now, an essential aspect of effective teaching (Davis, 2018). Modern developments all over world also necessitate for technology literate teachers to maneuver educational technology, effectively and efficiently in classroom teaching (Dantoe, 2018; Taras & Kartoglu, 2018).

Englund et al. (2017) argued, though modern technology has made significant inroads into universities, widespread use of technology by academics has not yielded the requisite conceptual changes to traditional modes of teaching. It is very disappointing because the envisaged potential of ICTs to transform teaching processes in higher education is being missed (Al-Senaidi et al. 2009). Although universities have invested significant, financial and human resources, academicians are using the LMS merely as a repository for subject materials and information sharing (Cabero-Almenara et al. 2019).

Role of social media in teaching-learning contexts is an emerging trend in higher education (Manca 2020). It is revealed through research that despite proliferation of Web 2.0 technology, academics have not embraced the opportunity to use this technology to support their pedagogy, content delivery and assessment (Manca and Ranieri, 2016). Lack of interest regarding use of social media in academic practices indicates that academics are ambivalent about the role that social media should play in teaching and learning. In light of this Stathopoulou, Siamagka and Christodoulides (2019) indicate that faculty members have been “advised to keep a balance in terms of relevance of social media use, control, and usage level” of social media platforms.

Stathopoulou et al. (2019) suggest that academic interest in use of social media for instructional purposes, most research indicate that academics are averse to its use (Manca & Ranieri, 2016). The ubiquity of social media in higher education transformed teaching processes through collaborative learning, flexible learning environments and interactive user-centred learning (Amin & Rajadurai 2018).

Thorvaldsen and Madsen (2020) posited that integration of ICTs into academics’ pedagogic practice is a complex process as the teaching itself is a complex process (Loughran, 2013), technology integration should not only focus on academics’ knowledge of technology, curriculum and pedagogy (Mishra & Koehler 2007). Teaching technologies have modified the traditional modes of education at higher education institutes globally, that provide equal prospects for teachers and students to equip themselves with modern skills (Laurillard, 2013). A huge capital was invested in technology for higher education; however, utmost use of technology by faculty members is not guaranteed. That is why numerous studies have been conducted on how university faculty goes about implementing technology within their instruction (Hoffman, 2013).

Machado & Chung, (2015) argued, in classroom instruction meaningful technology integration is indeed very important as it boosts student’s achievement and learning. However, higher education faculty members lack the desire to implement new technology during their teaching (Jackson, 2019). Research conducted in the past explored salient aspects that influenced the acceptance and usage of technology in different contexts Parra (2019) and Khan (2018). However, educational sector was relegated and the factors affecting acceptance of technology were least focused.

Educational. technology is a diversified field developed from different elements of different domains. It is an amalgamation of ‘Perception Psychology’, ‘Cognitive Psychology’, ‘Evaluation’, ‘Communication’, ‘Management’, ‘Measurement’, Media and systems engineering elements. These elements are organized in a manner that the whole part is bigger than all of its components. This field was rapidly developed from the audio-visual educational system through the educational communications and then educational technology elements (Khan, 2018).

Findings of a research conducted in Pakistan also revealed that the university teachers are not using the technology to their utmost potentials for teaching purposes (Ellahi. & Zaka, 2014).

Additionally, another study regarding administrative barriers in dual mode universities revealed that faculty members do not possess requisite skills and the head of departments lack appropriate skills of motivating their faculty for successful dissemination of distance education at dual mode universities

(Saifi, 2016). Hence, this research focused to check relationship between technology acceptance by university teachers and their demographic characteristics.

### 1.1. Objectives of the Study

Following are the objectives of this research:

- 1.To examine the acceptance and use of technology of. by university teachers.
- 2.To explore relationship of demographic characteristics with technology acceptance of university teachers.

### 1.2.Research Questions

Following questions served purpose of the research:

- 1.To what extent the university teachers have acceptance of technology?
2. To what extent the characteristics of the teachers correlate with technology acceptance at university level?

### 1.3.Research Hypothesis

Following were the .hypothesis of research:-

H1 There is sufficient acceptance of technology by university teachers.

H2 There is a significant relationship between demographic characteristics and technology acceptance of university teachers.

## 2. Literature Review

### 2.1. Introduction

Technology acceptance in higher education is often considered as utopian notion without proper research to comprehend the context and requisite technological skills for teachers (Marshal, 2018). Educational technology is often expected as the .hardware only; although, it is in fact, the most important is software that is, material and requisite procedures that determine specific ways hardware is used for the purpose toward it is desired (Sharma, 2018).

Lewis, Fretwell, Ryan, and Parham, (2013) suggested few emerging technologies to be used in higher education i.e. Course Management System (Blackboard, Moodle, etc), LinkedIn, face-book, and twitter, that are at the moment are being well thought-out a novel .communication modes for effective delivery of instruction in classrooms. Schoonenboom, (2014) argued that the teachers in higher education institutes perform some instructional tasks through learning management system. Similarly, Teixeira, Costa and Alvelos, (2019) analyzed the .acceptance and usage of technology by university academicians in their teaching and revealed that the highest technology that were used are moodle, face-book and you-tube. However, findings of the research conducted by Shana & Abulibdeh (2017) concluded that imagined ease of use by teachers affects their intentions to use ICTs in future endeavors.

Highlighting the role of teacher and technology, Sharma (2018) argued that people presume that .educational .technology would certainly replace the teachers and there are likely chances that it may result into plenty of jobless the teachers. Actually, they are mistaken, as, the technology could never take the place of a teacher. This is because of three dimensions of the .educational .technology i.e. (a) Input, (b) Process, and (c) Output. Since, input is the job of a teacher hence; the technology would not be able to snatch that position.

Fathema and Sutton (2013) identified the salient aspects, including the documents sharing, posting of grades and exchange of assignments as most commonly used features of Blackboard LMS by

the university teachers. It was further identified that specific challenges encountered by the faculty members include the design issues and system problems that has lessened all around usage of learning management system by teachers. Holdan and Rada (2011) stated the technology effectiveness of teachers also affects their technology acceptance and usage.

## **2.1. Educational Technology**

Educational technology is the use of a novel idea or technology to help out the processes of successful classroom teaching (Newhouse, Trinidad & Clarkson, 2002). The educational technology is a broader field of knowledge and there are a number of definitions from various disciplines which are based on theoretical knowledge. Cifuentes, Maxwell, and Bulu (2011) explained that the educational technology is combination of different tools and the processes which play role in meeting the needs and problems of education. Moreover, it emphasizes upon application of the recent gadgets and tools i.e. software applications, computers and electronic devices, etc.

### **2.2.1 The World Wide Web.**

It is the hyper-text languages system which uses effective means of transport mechanism (Akir, 2006). Users try to map the world by clicking on these links that are connected through multiple connections and display another document. Integration of different forms of multimedia through hypertext, the Web has turned into a perfect medium for sharing the content on the internet (McIsaac & Gunawardena, 2001). Ko and Rossen (2017) explained that it is a networked based multiple locations that allow the users to share the protocols which are common for the graphic displays, texts, videos and audios, etc. the internet explorer, firefox, google chrome, and safari, etc. are few of common programs of software which extend support for delivery of the W3.

### **2.2.2 Learning Management System.**

LMSs in higher education are becoming primary gears for dissemination of education through distance learning in the colleges and higher education institutions all over the globe. These tools are being employed to introduce a diversified combination of the blended or completely on-line teaching which may be mediated through a tutor. The learning management systems play a significant role in university campuses as it is a novel concept for educational processes to discover in assorted settings of education (Akir, 2006).

### **2.2.3 Electronic Mail.**

It is a tool of asynchronous communications which is accepted at a large scale for effective communication in the domain of education (Gasaymeh, 2009). According to Akir (2002), few pertinent advantages of electronic mail are: easily communication between students and tutors anytime; it also minimizes face-to-face interaction between learners and their tutors; it also allows the tutors in sharing any type of announcement to students followed by the surety that those messages are received and read; and also improves delivery of the learning material. It also allows the users for attachment of learning material e.g. graphics, presentation, or any type of files that may provide support during learning.

### **2.2.4 Discussion Bulletin Boards.**

It is a very important mode of exchanging the learner specific communications (Akir, 2006). It is a useful software program for sending and receiving the messages (Ko & Rossen, 2010). Discussion Bulletin Board term may also be replaced and used with the discussion forums, electronic bulletin boards, conference areas, web forums, conversation groups, Interactive messages and the news groups (Ko & Rossen, 2010).

### **2.2.5. Video and Audio Conferencing.**

In 21st century, this is been a workable solution for delivery of distance education to correspond with one and other i.e. students and tutors. According to Hu and Wong (2006), the biggest problem with asynchronous tools is that learners and teachers cannot view and hear the gestures and expressions of both teacher and students. Moreover, the audio-video conferencing is a software program which permits audio and video communications-one-to-one or among the groups (Ko & Rossen, 2010). This term may also be exchanged with the video-conferencing or the video-teleconferencing. The video conferencing permits the tutors to remain connected with the learners; the teachers may also share the lecturers from guest speakers from other universities, further allows the academics to participate in the defense of thesis from or at the remote campuses and also enables communication between teachers and the learners (Ko & Rossen, 2010).

### **2.2.6 Wiki.**

It is a program that permits copying, creating and cutting of matter on web pages with no specific awareness and understanding about the codes of a programming language (Ko & Rossen, 2010). It is a short letter taken from Hawaiian language, the wiki-wiki, that represents the speedy or rapid (Richardson, 2010). Wiki wiki web was the only wiki that was developed by Mr. Ward Cunningham in the end of 20th century (Kessler, 2009). Similarly, the encyclopedia, the wikipedia, wiki spaces are the popular models. It is an effective tool for internet based distance education to enhance the .collaborative writing techniques of learners (Kessler, 2009).

Franklin and Thankachan (2012) enumerated a number of advantages of using the 'Wikis'. It permits learners to extend and formulate their self developed websites and exchange necessary data with the friends. It also permits the learners to give feedback, mark, present their assignments and projects. It further facilitates the tutors to evaluate the work of their students and extend necessary support, when they needed and suggest other resources as well as the thoughts that are based on findings of other students.

### **2.2. Technology Acceptance**

Introduction of technology brings forth new opportunities for academics in higher education institutions to reconfigure the way they conduct their business of facilitating teaching and learning (Vandeyar, 2020). Educators have always experienced the art of teaching, which evolved over centuries by adopting new approaches, methods, tools, and technologies. Rapid growth emerged in science and technology in last century which resulted in ground breaking innovations and exciting new technologies (Akbar, 2016).

According to Saifi (2016) technology acceptance is very significant for successful accomplishment of educational processes in any organization. Teachers can utilize technology applications as a simulation of the real-world, creating the opportunity for students to explore authentic tasks, such as interacting with people in different cultures, exploring various locations around the world, and gathering information to solve the problems or implementation of the information systems. In present research, technology acceptance phrase is being used to refer to the issue under investigation.

Davis (2018) highlighted that oftenly employee are un-willing to adopt the novel concepts or technology even considered it may considerably increase the performances of users. While discussing the adoption of new technology by employees, Davis (2018) suggested that the personnel involved in research practices need to comprehend the reasons of not accepting the new ideas and technology by the employees and how they resist new technology so that system which are applicable may be devised to enhance the acceptability of novel ideas. Some of the faculties in educational institutions resist learning about and using the technology (Khalil, 2013).

A body of research has probed into the ways how the demographic, social, and personal attributes of the teachers impact the acceptance of technology influence at higher education institutes. Bayhan, Olgun and Yelland (2002) concluded, most of the teachers do not use the technology during teaching in their classrooms. It was further asserted that the less level of the confidence and requirement of specialized grooming of the instructors significantly contributed to such results. Aypay (2010) investigated the attitudes of teachers towards ICTs and concluded that the experience, factors of motivation, demographics, and various methods of teaching influenced usage of ICTs and other technology by teachers. One of the most thrilling results of this study unfolded that computer knowledge of more than 70% of the teachers was found very less as compared to most thrilling results of this study unfolded that computer knowledge which indicated that the computer literacy indirectly or straightforwardly related to the use and incorporation of the technologies in processes of education.

Wang and Wang (2009) identified that the most thrilling results of this study unfolded that computer knowledge based technology, however the 'perceived usefulness' influenced a lot. Similarly, Petko's (2012) research revealed that instructors do not choose the online learning as it was thought by them that this would be very easy to use. Motaghian, Hassanzadeh and Moghadam, (2013) also concluded the same results about instructors at university of technology in the Iran.

### **2.3. Unified Theory of Acceptance and Use of Technology.**

It is an authentic and popular framework in the domain of models and theories of acceptance of technology. Similarly, the earlier models, it also focused to elaborate user intentions in using the information systems and the use behaviors of the individuals. Similarly, researchers like Venkatesh, Morris, and Davis (2003) framed the amalgamated construction to elaborate thorough concept of the acceptance processes than the prior models. Till now, more than eight models were presented in the field of information systems with more or less deviations. However, all of those models had genesis in field of sociology, psychology, and various systems of communication and these earlier models forecasted and explained the individual behavior while using number dependant variables. This model was contextualized on the perceptual and experimental differences and similarities among eight models. Four key constructs were the basis of this unified theory which are the effort expectancy, performance expectancy, social influence, and the facilitating conditions (Venkatesh et al., 2003).

Moreover, few mediating variable like experience, gender, and age were assumed for the impacts of four fundamental aspects on intention and behavior of technology usage. Effects of the usefulness, perceived ease of use, and the actual intentions were also moderated by mediating variable like experience, gender, and age were assumed for the impacts of four fundamental aspects on intention and behavior of technology use varied with age and gender (Venkatash et al., 2003). The theory is based on four determinants of behavioral intents and intentions to use; which are the performances, efforts expectancies, social influences and the facilitating condition. Following are the determinants:-

#### **2.3.1. Performance Expectancy.**

The extent to that an individual believes; the use of system will increase his/her maximum achievements and performance at the job.

#### **2.3.2. Effort Expectancy.**

It is the level of ease connected with convenience involved in the use of information systems.

#### **2.3.3. Social Influence.**

It is the extent to that one perceives that the people around him/her believe that he/she must use the novel technology/systems.

#### **2.3.4. Facilitating Conditions.**

Extent to that any individual believes, the requisite technical and organizational infrastructures exist to support the utilization of novel systems /technology.

#### **2.5. UTAUT in Educational Context**

In the domain of education, this model was adopted in a number of studies; however, few of them claimed that this model received very less validation in education contexts (Wong, Teo, & Russo, 2014). It was also proven through past literature that implementation of the technology model extends its validity with a number of researches pertaining to the technology. Implementation of the interactive whiteboards in the field of education also produced thrilling results in terms of constructive teaching. Studies conducted Wong et al., (2014) investigated the level of acceptance among teachers and the student teachers with this model. These researches found contradicting results and the performance expectancy influenced significantly the behavioral intentions, but the effort expectancy had no specific effects in one of the study. However, the facilitating conditions and the social influences have less relevance in both of these researches.

### **3. Methodology**

#### **3.1. Nature of Study**

It was a co-relational research as the objective was to ascertain association between technology acceptance of university teachers and their demographic characteristics. According to Gay, Mills and Airasian (2012), co-relational research involves the data collection to conclude if, and to what extent, correlation exists between the variables under investigation. Core objective of any co-relational research is to ascertain the associations or to use the existing ones for making the predictions. Correlation may be referred as statistical calculation of the level of association.

#### **3.2. Research Design**

Mixed method research was embarked upon and the sequential explanatory research design was pursued. Mixed methods researches combine the qualitative and quantitative approaches by mixing both the quantitative as well as the qualitative information in one research. Core objective of the mixed method researches is to develop on the strengths and the synergy which persists between these methods of qualitative and quantitative researches to comprehend the experiences more forcefully than it is possible by using any of the quantitative or qualitative techniques, alone (Gay, Mills & Airasian, 2012).

#### **3.3. Population**

In the process of transformation of university education, higher education commission established a number of private and public sector universities nationwide. At present, a total of one hundred and seventy-one universities have been set up all over country and out of those, thirteen universities were mandated with the task to launch distance education programs. All teachers involved in teaching in the dual mode programs were the population of this study.

#### **3.4. Sample and Sampling**

Proportionate stratified random sampling technique was used for selection of appropriate sample and a representative sample of 300 teachers was randomly selected by following the table of random numbers. In order to conduct interviews for qualitative data collection, 20 teachers were randomly chosen to triangulate and validate the information collected through survey questionnaire.

#### **3.5. Research Instruments**

Quantitative data was collected through five point likert scale questionnaire and the qualitative information was obtained through semi-structured interviews of participants. Questionnaire items

were adopted from different scales used in previous researches. However, the adopted items were rephrased in line with specific context and background of the study.

**3.5.1. Validity and Reliability of Instrument.**

Initially developed questionnaire was comprised of 75 statements and to ascertain the validity it was shared and consulted with subject experts in field and their valuable feedback was acquired for subsequent amendments. Valuable suggestions and recommendations like re-phrasing of statements and substitution of difficult words were incorporated to make questionnaire easily understandable. Internal consistency and reliability of tool was checked through Cronbach’s alpha and overall reliability was found as 0.83.

**3.6. Data Collection and Analysis**

Refined questionnaire was distributed personally to sampled 300 respondents and out of those, 287 questionnaires complete in all respects were received back and response rate was found 95%, as few of participants did not respond properly. In order to analyze qualitative data, percentages, arithmetic means, standard deviation, and t-tests were applied through SPSS and thematic technique of analysis was employed for qualitative data analysis.

**4. Data Analysis**

**4.1. Quantitative Data Analysis**

H1 There is sufficient acceptance of technology by university teachers.

**Table 4.1. Cumulative results regarding Technology Acceptance**

Table 4.1. Cumulative results regarding Technology Acceptance

S No	Indicators	N	SDA	DA	N	A	SA
1	Performance Expectancy	287	9.6	35.5	3.8	18.8	32.3
2	Effort Expectancy	287	12.3	31.5	4.2	25.0	27
3	Social Influence	287	17.7	34.7	3.5	22.6	21.4
4	Facilitating Conditions	287	29.2	32.0	1.2	20.7	16.9
5	Intention to Use	287	17.7	19.6	4.0	33.3	25.0
6	Actual Use	287	25.1	33.7	4.6	19.9	16.8
Overall Percentage			18.6	31.2	4.2	23.4	23.2

Table 4.1 depicts that 9.6% of participants were strongly disagreed, 35.5% were disagreed, 3.8% remained neutral, 18.8% were agreed, and 32.3% were strongly agreed that teaching performance increases with educational technology. It may be concluded that majority of participants were disagreed that teaching performance is increased while using technology in teaching.



12.3% of the participants were strongly disagreed, 31.5% were disagreed, 4.2% remained neutral, 25.0% were agreed, and 27% were strongly agreed that effort is required for teaching with technology. It may be concluded that the majority of participants were disagreed that more effort is required for teaching with technology.

17.7% of participants were strongly disagreed, 34.7% were disagreed, 3.5% remained neutral, 22.6% were agreed, and 21.4% were strongly agreed that he/she is socially influenced for use of technology. It may be concluded that greater majority of participants were disagreed that he/she was socially influenced for use of technology in teaching.

29.2% of respondents were strongly disagreed, 32% were disagreed, 1.2% remained neutral, 20.7% were agreed and 16.9% were strongly agreed with statement that I am facilitated for use of technology. It may be concluded that majority of participants were disagreed with statement that he/she is facilitated for use of technology in teaching. 17.7% of the participants were strongly disagreed, 19.6% were disagreed, 4.0% remained neutral, 33.3% were agreed and 25% were strongly agreed with statement that I intend to use technology in teaching. It may be concluded that greater majority of respondents have intentions to use technology in teaching. 25.1% strongly disagreed, 33.7% were disagreed, 4.6% remained neutral, 19.9% were agreed, and 16.8% strongly agreed that he/she uses technology in teaching. It may be concluded that greater majority of participants were not using technology in teaching.

It is clear from overall findings that 18.6% of respondents were strongly disagreed, 31.2% were disagreed, 4.2% remained neutral, 23.4% were agreed, and 23.2% were strongly agreed with statement that I am using technology for teaching. Therefore, it may be concluded that greater majority of participants were not using educational technology in teaching.

**Table 4.2. Mean scores, Std. Deviation, Std. Error of mean of the sub-components of Technology Acceptance**

Variables	N	Mean	Std. Deviation	Std. Error of mean
Performance Expectancy	287	4.15	.487	.028
Effort Expectancy	287	3.83	.541	.031
Social Influence	287	3.84	.617	.036
Facilitating Conditions	287	3.82	.496	.029
Intention to Use	287	4.37	.210	.012
Actual Use	287	3.34	.871	.051

Table 4.2 shows that mean scores of Performance expectancy was 4.15, Effort expectancy was 3.83, Social influence was 3.84, Facilitating conditions was 3.82, Intention to use was 4.37 and Actual Use was 3.34. Therefore, it may be concluded that performance expectancy and intention to use the educational technology were stronger components as compared to effort expectancy, social influence, and facilitating conditions. However, actual usage of technology was very less. Therefore, it may be concluded that there was significantly less acceptance of technology by university teachers.

H2 There is a significant relationship between demographic characteristics and Technology acceptance of university teachers.

**Table 4.3. Gender wise t-test results of Participants on Technology Acceptance**

Gender	N	Mean	Std. Deviation	Std. Error of Mean	Degree of Freedom	T Value	P Value
Male	157	3.99	.174	0.013	285	4.362	0.0001

*Significance Level 0.05*

Data in the table 4.3 depicts that the mean scores of male participants on technology acceptance is higher than their female counterparts and t value (4.362) is also significant at 0.05 level of significance and there is a significant difference between mean scores in favor of male respondents. Therefore, it may be concluded that the male teachers are significantly better on technology acceptance at university level.

**Table 4.4. t-test scores on Technology Acceptance in terms of University Status**

Status	N	Mean	Std. Deviation	Std. Error of Mean	Degree of Freedom	T Value	P Value
Public	253	5.12	1.580	0.123	285	5.895	0.0001
Private	34	4.02	1.844	0.137			

*Significance Level 0.05*

Data in the Table 4.4 depicts that mean scores of participants from public sector universities regarding technology acceptance is higher than the respondents from private sector universities and t value (5.895) is significant at 0.05 level of significance and there is a significant difference between mean scores in favor of teachers from public sector universities. So it is concluded that teachers from public sector universities were significantly better on technology acceptance as compared to the teachers from private sector universities.

**Table 4.5 One way ANOVA results on Technology acceptance in terms of University Location**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.217	4	.554	18.596	0.000
Within Groups	8.406	282	.030		
Total	10.624	286			

*Significance Level 0.05*

Data in the table 4.5 depicts that P value is less than 0.05 which shows that there is a significant difference on technology acceptance in terms of university location and it is decided to run post-hoc multiple comparisons.

**Table 4.6. Post-hoc multiple comparison scores on Technology Acceptance in terms of the University Location**

Variables	Mean Difference	P Value
Baluchistan vs Punjab	0.226	0.0001
Baluchistan vs Sindh	0.259	0.0001
Baluchistan vs KP	0.192	0.001
Islamabad vs Punjab	0.342	0.0001
Islamabad vs Sindh	0.375	0.0001
Islamabad vs KP	0.308	0.0001

Table 4.6 shows that participants from universities located in Baluchistan were significantly using more technology than respondents from the Punjab, Sindh and KP. Moreover, respondents from Islamabad were using more technology than respondents from universities located in Punjab, Sindh and KP. So, it can be concluded that respondents from universities located in Baluchistan and Islamabad were significantly better among group on technology acceptance.

**Table 4.7. Department-wise One way ANOVA results on Technology Acceptance**

	Sum of Squares	df	Mean Square	F	Sig.
Between groups	0.516	6	.086	2.383	0.029
Within groups	10.108	280	.036		
Total	10.624	286			

*Significance Level 0.05*

Data in table 4.7 depicts that P value is less than 0.05, it shows that there is significant difference on technology acceptance of university teachers in terms of different departments and it is decided to run post-hoc multiple comparisons.

**Table 4.8. Department-wise scores of Post-hoc multiple comparisons on Technology Acceptance**

Variables	Mean difference	P Value
Education vs History / Pak Studies	0.179	0.001
Education vs Islamic Studies	0.127	0.036
Education vs Economics	0.175	0.001
Education vs English	0.131	0.009
English vs History / Pak Studies	0.139	0.023
English vs Economics	0.127	0.026
English vs Urdu	0.175	0.001
Business Administration vs Economics	0.131	0.009

Table 4.8 shows that participants from department of Education were using significantly more technology than respondents from departments of History / Pak Studies, Islamic Studies, Economics and English. Respondents from department of English were also using significantly more technology than the respondents from History Pak Studies, Economics and Urdu. Respondents from the department of Business Administration were also significantly better in technology usage than the respondents from Economics department. So it is concluded that respondents from the departments of Education and English were significantly better among group on technology acceptance.

**Table 4.9. One-way ANOVA scores on Technology Acceptance in terms of Teachers' Ranks**

	Sum of Squares	df	Mean square	F	Sig.
Between the groups	1.368	4	.342	10.419	0.0001
Within the groups	9.256	282	.033		
Total	10.624	286			

*Significance Level 0.05*

Data presented in table 4.9 depicts that P value is less than 0.05 which shows that there is a significant difference on technology acceptance in terms of teachers' ranks and it is decided to run post-hoc multiple comparisons.

**Table 4.9. Post-hoc multiple comparison results on Technology Acceptance in terms of Teachers' Ranks**

Variables	Mean difference	P Value
Associate Professor vs Lecturer	0.098	0.004
Associate Professor vs Assistant Professor	0.171	0.0001
Professor vs Lecturer	0.099	0.021

Professor vs Assistant Professor	0.173	0.0001
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Data presented in table 4.9 shows that participants having rank of Associate Professor are using more technology than Lecturers and Assistant Professors. Similarly respondents having rank of Professor are significantly using more technology than Lecturers and Assistant Professors. Hence, it is concluded that the participants having rank of Associate Professor and Professor were significantly better among the group on Technology acceptance.

**Table 4.10. One-way ANOVA results on Technology Acceptance in terms of Participants' Age**

	Sum of Squares	df	Mean Square	F	Sig.
Between the groups	.794	4	.199	5.696	.0001
Within the groups	9.830	282	.035		
Total	10.624	286			

*Significance Level 0.05*

Data shown in the table 4.10 depicts that P value is less than 0.05 which shows that there is a significant difference on technology acceptance in terms of age of participants and it is decided to run post-hoc multiple comparisons.

**Table 4.11. Post-hoc multiple Comparisons on Technology Acceptance in terms of Teachers' Age**

Variables	Mean Difference	P value
31-40 vs < 30	0.722	0.003
31-40 vs 51-60	0.155	0.0001
41-50 vs 31-40	0.120	0.001
41-50 vs 51-60	0.707	0.004

Data in the table 4.11 depicts that the respondents having age between 31-40 years were significantly using more technology than the participants having age <30 and between 51-60 years. Similarly, respondents having age between 41-50 years are significantly using more technology than the respondents having age bracket 31-40 and 51-60 years. Therefore, it is concluded that the participants having age between 31-50 years were significantly better among group on technology acceptance.

**Table 4.12. One-way ANOVA results on Technology Acceptance in terms of Academics Qualifications**

	Sum of squares	df	Mean squares	F	Sig.
Between Groups	0.241	3	0.080	2.193	0.089
Within Groups	10.383	283	0.037		
Total	10.624	284			

*Significance Level 0.05*

Data presented in the table 4.12 reflects that the P value is greater than 0.05 which shows that there is no significant difference on acceptance of technology in terms of academic qualifications of participants.

**Table 4.13. One-way ANOVA results on Technology Acceptance in terms of Teaching Experience**

	Sum of squares	df	Mean square	F	Sig.
Between groups	0.770	4	0.192	5.505	0.0001
Within groups	9.854	282	0.035		
Total	10.624	286			

*Significance Level 0.05*

Table 4.13 shows the P value is less than 0.05 which reflects that there is a significant difference on technology acceptance in terms of teaching experiences and it is decided to run post-hoc multiple comparisons.

**Table 4.14. Post-hoc multiple comparisons regarding Technology Acceptance in terms of Teaching Experiences (Years)**

Variables	Mean Difference	P value
11-15 vs 6-10	0.089	0.004
11-15 vs 16-20	0.123	0.0001
11-15 vs 20+	0.094	0.045
6-10 vs 1-5	0.740	0.003

Table 4.14 depicts that participants having 11-15 years of teaching experience were significantly using more technology than the participants having 6-10 years, 16-20 and 20+ years of teaching experience. Similarly, participants having 6-10 years teaching experience is using more technology than respondents having 1-5 years of teaching experience. Therefore, it may be concluded that participants having 11-15 years of teaching experience were significantly better among group on technology acceptance.

#### **4.2. Qualitative Data Analysis**

In order to collect qualitative data, interviews were conducted from twenty academicians. A number of techniques and methods are available for qualitative data analysis e.g. content analysis, discourse analysis, thematic analysis and grounded theory (Brawn & Clarke, 2013). However,

thematic analysis technique is widely used and considered as most predominating technique for analysis of qualitative data (Christofi, Nunes, & Peng, 2009). Mr. Brawn & Clarke (2013) described, it is a technique for identification, analyzing and reporting the patterns within specific information (2006). This approach of data analysis may be applied across a variety of epistemological and theoretical techniques (Braun & Clarke, 2013). During in-depth analysis of information collected through interviews following themes and sub-themes were surfaced out.

Theme 1: Acceptance and use of technology by university teachers

It is universal truth that changes in any organization are always discouraged. However, human expectations and efforts compel them to adapt to that change process and make sure that the individuals implement the change at their own.

Sub Theme 1: Outcomes while teaching with technology

There are several factors that create an impetus among the individuals in adoption of novel technology in teaching. One of the respondent told that “teaching outcomes are increased while teaching with technology” (Respondent-12).

Another teacher commented that “constructive teaching outcomes can be achieved if student and teachers interact frequently. However, technology supports and facilitates in visualizing the concepts in the form of objective reality” (Respondent-2).

Sub Theme 2: Efforts required for integration of technology

Training workshops and seminars must be conducted for imparting peculiar skills and techniques necessary for incorporation of technology in teaching. One of the teachers told, “a lot of effort is required for technology use in teaching however, particular skills may do the job easy for us” (Respondents-11).

Another respondent remarked that “majority of the teaching staff is not familiar with use of new software and their application in teaching” (Respondent-9).

Sub Theme 3: Social influence

In day to day life activities the social influence has a significant role in implementation of new changes. It may be due to peer pressures or might be to enhance the student’s interest and comprehension. One of the participants told that “students’ participation is increased. Moreover, peers have also guided me to use appropriate technology” (Respondant-3).

Another respondent remarked, “my near and dear ones guided me to use technology and keeping in view the students’ interest I have diverted my focus” (Respondant-11).

#### **4.3. Integrated Analysis**

When a researcher selects the two different data sets and tactfully combines the both type of data or integrates the both types, it required to be merged. Therefore, researchers merge the both type of data sets during its interpretation phase. Analyzing the both data sets, independently, during findings segment and combining or mixing the both results in analysis or interpretation stage or in discussion stage of data (Cresswell, Vicki & Clark, 2011).

Numeric analysis further revealed that technology acceptance / use was significantly very low and the same was endorsed during interviews data analysis that university teachers were not using the technology for teaching due to various reasons. Further, quantitative analysis revealed that the male university teachers were significantly better on utilization of technology in their teaching as compared to their female counterparts and the same was endorsed during interviews analysis that female teacher were less prone towards use of technology for teaching as few remarked that they were unable to handle CMS / LMS for communication with their students.

#### **4.4. Discussion**

Prime focus of this research was to investigate relationship of technology acceptance with demographic characteristics of teachers. This study unfolded few thrilling results which are delineated in the subsequent paragraphs. Male teachers were significantly good in acceptance of technology as compared to their female counter part and it corroborates the findings of research conducted by Mr. John (2015), who explored the attitude of the faculty members towards technology integration during teaching process. However, it contradicts with the findings of Osman (2014) whose research was about staff members' usage of the ICTs in university of Khartoom and significant difference was not observed between the male and female participants. Further results revealed that the respondents having age between 31-40 years were significantly better on technology acceptance these findings corroborated with another study conducted by Gyamfi (2017) that younger staff members make more use of ICT as compared to older ones. Moreover, findings from the study of John (2015) also corroborated these results. The research revealed significant difference on acceptance of technology among the teachers of different disciplines as it revealed that teachers from the department of education were significantly better in group on acceptance of technology which is in consistency with the finding of research conducted by John and Velle (2004) that teachers from mathematics and science disciplines were more open in employing the technology in their classrooms than those teachers who were teaching in departments of humanities and music. Results revealed that the respondents from public sector universities were significantly better on technology acceptance than those from the teachers who belonged to universities of private sector and it contradict with findings of Osman (2014) that a significant difference was found in the use of information systems and ICTs for teaching purposes by the staff members of the universities in favor of teachers who belong to the private universities and similar results were surfaced from the study conducted by Nour and Samia (2011). This research found that respondents having rank of Associate Professor and Professor were significantly better on technology acceptance which is inconformity with findings of (Abdulraheem & Almusawi, 2003).

## **5. Conclusions**

### **5.1. Conclusions**

From the general picture of analysis based results, following conclusions were drawn:-

1. Male teachers were significantly better than their female counterpart in technology acceptance.
2. Teacher from public sector universities were significantly better in acceptance and use of technology than teachers belonging to private sector universities.
3. Teachers from universities of Baluchistan and Islamabad were significantly better in technology acceptance.
4. Teachers from department of Education were significantly better in technology acceptance.
5. Teachers having rank of Associate Professor and Professor were significantly better in technology acceptance.
6. Respondents having age between 31-40 years were significantly better in technology acceptance.
7. Respondents having teaching experience between 11-15 years were significantly better in technology acceptance.
8. Acceptance of technology by university teachers was found significantly very less.

### **5.2. Recommendations**



Keeping in view findings and conclusions of research, following recommendations are offered:-

1. Female university teachers should also be motivated to use technology for teaching.
2. Management of private sector universities must focus on acceptance and use of technology by teachers.
3. Teachers from department of Business Administration, English, Urdu, Economics and Islamic Studies must focus on the use of technology. Moreover, customized training must be conducted regarding usage of modern technology for teaching.
4. Lecturers and Assistant Professor must lay special emphasis on use of educational technology for teaching.
5. Availability of un-interrupted internet / wi-fi connection must be ensured in all universities / sub campuses.
6. SOPs / LOPs for teachers may be formulated at department level regarding integration and use of technology in teaching.
7. Necessary amendments must be incorporated in syllabus and curriculum of teacher training programs regarding effective integration and use of technology.

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European journal of volunteering and community-based projects Vol.1, No 3; 2020

ISSN: 2724-0592 E-ISSN: 2724-1947

Published by Odv Casa Arcobaleno

Wang, Y., Wu, M., & Wang, H. (2009). Investigating the determinants and age and gender differences in the acceptance of mobile learning. *British Journal of Educational Technology*, 40(1), 92-118. doi: 10.1111/j.1467-8535.2007.00809.x.

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With the patronage of:



**European journal of volunteering and community-based projects Vol.1, No 3; 2020**  
**quarterly publication**

**ISSN: 2724-0592    E-ISSN: 2724-1947**

**<https://pkp.odvcasarcobaleno.it/index.php/ejvcbp/>**

**Published by Casa Arcobaleno Odv**

Attività di organizzazioni per la tutela dei cittadini

Iscritta sez. Provincia di Torino Registro regionale delle Organizzazioni di Volontariato determina  
150-34064 del 06/10/2014

C.F. 94570230014

Sede legale: Via Gianbattista Cacherano 14 I – Bricherasio To

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