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# The Sequential Mediating Effect of Training and Individual Performance in the Relationship between SAP and Desired Outcomes with Perceived Financial Performance: (A Study of Accountant General Office, Peshawar, Khyber Pakhtunkhwa, Pakistan)

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## *Abstract*

*The main purpose of this research study was focused on the implementation of System Application Product (SAP) and accounting changes in the budgeting and accounting offices of Peshawar, Pakistan. In this connection, desired outcomes with perceived financial performance are selected as dependent variable, SAP as independent variable while training & individual performance are selected as mediating variables. Pure quantitative approach is employed, while data is collected through adopted questionnaire from 300 employees of Accounting General office Peshawar. The results of simple mediation shows that the relationship between SAP and individual performance is positively mediated by employees' trainings. Moreover, the relationship of SAP and desired outcomes is also positively mediated by employees training. The results of sequential mediation analysis showed that the relationship between SAP and desired outcomes with perceived financial performance are sequentially mediated by trainings to employees and individual performance. Result shows that the initiation of SAP increases organizational orientation toward employees training that has improve individual performance, which significantly contribute towards the achievement of desired outcomes such as, (timeliness, completeness and accuracy of the financial statements) while including perceived financial performance like transparency in salaries, GP Fund and pension payments, accuracy in accounts information, delivery of financial management and audit functions, and customer satisfaction.*

***Keywords:*** *System Application Product, Training, Individual Performance, Desired Outcomes, Perceived Financial Performance, AMOS.*

## Introduction

Innovation of technology is not only enviable for a company or government. It is important for the progress of the nation too. Companies are unable to cope up with the outdated technologies. Technological advancement not only increases the organizational performance but it also let the employees to be well versed with the use of new technology. This article presents an analysis of the present state of implementation of accounting practices and the SAP as ERP (Enterprise Resource Planning) system in Pakistan in general and in the Accountant General Khyber Pakhtunkhwa in particular. SAP has reached a foremost position in the world in the market of enterprise applications. SAP is observed as the 3rd largest manufacturer of software in world based on market capitalization (SAP, 2015). SAP Company is spread over 190 countries with more than 291,000 customers, above 74,500 users and SAP annual revenue has reached 17.56 billion Euros (SAP, 2015).

This paper is composed of five sections. First, the paper describes the SAP as technology and will show the association of SAP with the desired outcomes including perceived financial performance of the organization. Second, the paper describes the role of training as mediator between SAP as technology and organization desired outcomes with perceived financial performance. Third, the researcher will focus the effects of training on individual level performance. Fourth, the researcher will find the connection of both training and individual level performance. Fifth, the desired outcomes will be measures through the mediation of training and individual performance. Finally, three models will be tested by using Hayes's process to find out the association between training, individual performance and desired outcomes with perceived financial performance of AG office.

The aim of this paper is not only enhance the understanding of effect of SAP technology on organizational level desired outcomes with perceived financial performance but also the effect of training on transfer and individual performance as well. The research has significant to the stakeholders of the Project for the Improvement of Financial Reporting & Auditing (PIFRA) project in particular academics and policy makers in general on the SAP technology, individual performance and training on the desired outcomes including perceived financial performance. The use of technology and particularly the information technology (IT) has brought positive changes and improvement in the desired outcomes which includes, timeliness, completeness and accuracy of the financial statements in many organizations (Bardhan, & Goh, 2012).

The desired outcomes includes but not limited to, timeliness, completeness and accuracy of financial statements, customer satisfaction, transparency in payroll, pension and banking system. It also includes the data security, integrity & reliability, and effective decision making. Individuals are very critical resource in every organization and by using Information Technology improving not only their performance but the productivity of the organization also increased many folds. The importance of training cannot be denied in implementation of information technology, the training is of vital importance in the overall success in organization (Umble, 2003). Prior studies has examined that good training program help SAP users to their complete impending and fully support organizations to achieve their desired outcomes of implementing an SAP as ERP system (Umble, & Haft, 2003).

One of the study was taken by (Ahmad and Schroeder 2003), argued that training in job skills & cross-training was found absolutely connected to operative performance in which one hundred and seven manufacturing plants were taken as sample. Training was taken as a mediator between operative performances via its effect on overall organizational performance within the test showed that training was only related to operational performance through its effect on organizational commitment within the plants. According to the study of one of the meta-analysis, there were examined about sixty seven general studies to find out the association between training to individuals, and firm financial performance. The results were clearly showed that training has a significant and positive connection with organizational performance and desired outcomes (Tharenou, Saks and Moore 2007). Another study which was conducted by Dezdar & Su

(2011), stated that training is positively allied with individual performance and their satisfaction, consequently leading to enhanced organization overall performance.

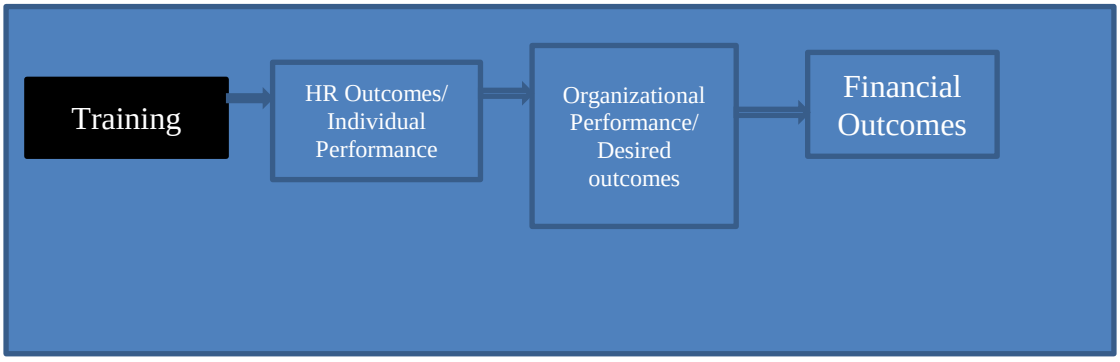
Training is considered the strong leading factor of organizational level outcomes Kozlowski et al., (2000), the theoretical foundation show an association with training researches. According to Konlowski et al. (2000), that several models of training complete with the transmission of individual level performance to the context of training and the development of theoretical contributions that how individual level performance results in organizational overall performance. Consequently, Kozlowski et al. (2000), summarized, that a level gap is existing in the literature regarding training. Although there is a goal of training that directly boost the organizational effectiveness. The model is mainly focused on methods, functions, and tools of training leads to individual level performance.

Effective SAP users training and education (Khan et al., 2020) empowers organizations to understand success and get benefits of SAP as ERP system (Jones, Kalmi & Kauhanen, 2011). Organizations have increasing concern that training and individual performance is the investment is the term of overall organizational performance (Salas & Cannon-Bowers, 2001), knowledge sharing during the session of training produces enhance human-system interaction (HIS) and improved SAP users confidence (Tharenou, Saks & Moore, 2007).

In prior studies of the writer Wright and McMahan (1992), produce a conceptual framework that integrates six theoretical models to understand the phenomena of training. According to Wright and McMahan (1992), both the framework and theoretical models of human resource practices effect on the individual performance as workforce and inspire their behaviors; HR behaviors then leads to the individual-level performance, and that individual-level performance improve the overall performance of the organization.
Among these six models, the second theoretical model is concerned with behavioral perspective which is related to the individual level performance. This perspective mainly focuses on worker role behavior as a mediator between firm strategy and firm performance (Wright 1992).

The theories reviewed in this section suggest that the effect of training on organizational level desired outcomes in mediated through direct effects of training on individual attitude & work behavior and the indirect effect of training on individual-level performance leads to the desired outcomes of the organization.

In summary, the HRM literature suggests that the nature of the relationship between training and organizational level outcomes might be universalistic perspective. In this connection, (Bowen, 2000) stated that, universalistic perspective, training program leads individual level performance result in improved organizational level performance. The below mentioned model shown resembles to universalistic perspective approach.




Theoretical model connecting training to organizational-level desired outcomes.

In the above figure, such that individual level performance mediate the relationship between training and organizational level performance (Bowen, 2000). Number of prior researches shown that training is one of the leading variable and important success factors of SAP as ERP (Dezdar & Sulaiman, 2011). Consequently, it is rational to claim that training will be mediated between SAP as ERP and desired outcomes of the system.

## Research Objectives

The main objective of the study is to find out the association between SAP and desired outcomes with perceived performance of the AG office. Further objectives are mentioned below.

a. To find the impact of SAP on desired outcomes with perceived financial performance of AG office.
b. To find the mediating role of training in between SAP and individual performance.
c. To find the mediating role of individual performance in between training and desired outcomes with perceived financial performance.
d. To find out the mediating role of training in between SAP and desired outcomes with perceived financial performance.
e. To investigate the serial mediating role of training and individual performance in between SAP and desired outcomes with perceived financial performance.

## Literature Review

### SAP as ERP

The common features of SAP as ERP software are not limited to only financial activities but also found in different modules including accounting, business intelligence, customer relationships, human resource management, supply chain management, manufacturing and inventory management (Burnson, 2015). Application package was considered as one of the most common solution to the Information Technology industry's compulsive issue of custom system design (Lucas, 1990). Material Requirement Planning (MRP) packages which was introduced in 1970's were designed to sustenance the difficult and monotonous production planning and regulator tasks (Hopp & Spearman, 1996). SAP as ERP has modified from Material Requirement Planning, assimilating the enterprise wide functional responsibilities including sales, purchase and order management, management of warehousing, financial and managerial accounting functions, and finally the critical duty of human resource management HRM (Nandhakumar, 2003).

SAP as ERP can be described as the configurable information systems bundle that assimilate information and information-based developments within the functional and across the practical areas in the organization (Nandhakumar, 2003).

It is a collective mechanism, established to joining assorted sections through a common database and compatible software components and modules (Hammer & Stanton, 1999). Gattiker and Goodhue (2002) described the significant landscapes of system applicant program (SAP) as ERP for instance data standards, procedure standards, process limitations, data margins and incorporation. The procedure limitations feature of SAP as ERP describes that it cannot be exhibited for each procedure of every organization. According to (Markus & Tanis, 2000) the important features of integrated software, generic processes based on best practices, commercial platform, software and hardware integration, and growing architectures and organized manners, each of which may have significant inferences for the SAP as ERP implementing companies. The crucial technology mechanisms of SAP as ERP are segmental structure, client-server architecture, shared central database, configuration, and variable interfaces (Davenport, 2000). Administration and Information technology platform need to be altered for diverse culture Jenson and Johnson (2007).

Dillard and Yuthas (2006) claimed that, all multinational companies are using SAP as ERP and that more small and medium enterprise (SME) have activated to implement SAP technology. Although, SAP as ERP's have the capacity to benefit companies and a considerable capital investment, but not all SAP implementations have fruitful conclusions. SAP as ERP applications commonly have delayed a projected schedule and infested an initial budget (Brown, 2003). SAP as ERP integrated in order to deal with operative information technology (IT) delivery to the business organizations covering a sequence of business land (Burnson, 2015). According to the report of benchmarking Partners, foremost go-live surprises that business practices related to the facts that it was tough for the people to hold the degree of discipline that was obligatory for daily basis due to the degree of integration compulsion by the system of SAP as ERP. The user of SAP have no indemnity that their actions has and immediate effect on the downstream operations. Concerned companies remained surprised by the existence of information gap between the training in a job and what employee's required to work effectually with the new technology of SAP. There was noticed that training had provided too early stage of SAP implementation, or there was not insufficient training, or and the wrong training skills were provided to the users of SAP. Proper less and insufficient training of end users of SAP technology was a reason of the failure of SAP technology (Gupta et al., 2005; Loh et al., 2006). As a result to measure the overall effect of SAP as ERP on a business, sufficient training and individual performance should be first priority in order to make the result more desirable (Loh et al., 2006). The sufficient capacity of training amazed some end users, whereas others end users were still confused by the absence of information about the new system and scarcity of training regarding the background of the new competence since a business stance.

According to Nandhakumar, et al. (2003), there is a universal risks of the implantation of SAP as ERP in many different types of businesses. The aim of SAP as ERP systems implementation is to create a chain activities business processes not only internal but external integration also for the betterment of firm's value and worth. The part of SAP project implementation is said to be significant when the implementation process go live and operate according to the standard and with the agreed requirements with fully successful regarding timely delivered with cost and quality (Brown & Vessey 2003).

The context of SAP as ERP has been measured thoroughly from multi-dimensional perspective, result in found improved organizational performance and successful completion of project within the specified time, cost and agreed deliverables (Ke & Wei 2008). Proper implementation, acceptance of deed and best use of project activities can support and confidence precedes desired outcomes of the system (Burnson, 2015).

According to the arguments of (Markus & Tanis 2000), use of different phases based approach in specified tasks might overview of innovations and novelties into the organization certainly leads to improved firm performance. The SAP as ERP literature has been largely application motivated (Haddara & Elragal, 2011). Adopting the knowledge implanted in SAP as ERP system is the utmost critical approach for attaining accomplishment in developmental projects (Dezdar & Sulaiman, 2009). Employees' education and regular based training (Khan et al., 2018) serve as a source to boost and simplify the transmission of explicit and inferred skills and knowledge hallowed in the schedules, functions and practices of SAP as ERP programs. Training can be describes as the on-going and continuous process of both psychological and explicit comprehension nearby the concepts, thinking, logic, functions, and processes of SAP as ERP systems. Established, well-defined and timely training considered as the most important element which equip users of SAP technology with the required and necessary skills and apparatuses to use SAP as ERP system professionally in their routine actions (Stratman & Roth 2002). SAP users training, user's involvement, individual performance and education is reflected the utmost important success influences in implementations of SAP as ERP (Noudoostbeni et al., 2010).

**Association of SAP, Training & Individual Performance**

A well-defined and regular based training program can facilitate SAP users employ the system to its full potential and can help organizations realize the complete benefits of executing of SAP as ERP system (Haft

& Umble 2003). Prior studies about the training was found to be significant and surely connected with end-users job satisfaction, which directly leads to enhanced individual performance (Dezdar & Sulaiman, 2011).

Nevertheless of distinct variances and whether an apprentice is learning new skills and knowledge of attaining information's of a certain theme. Everyone should be given the opportunity to practice what is actually taught. Self-practice is one important part of learning after the trainer has been efficaciously trained (Sims, 2002). Many but two are the major aspect of practice/ active practice and over learning. The active learning training permits the apprentice to perform the activity repeatedly and use the knowledge being learned. The over learning happens when apprentice are given the chance to practice outside the place where the task becomes second nature and can say the over learned. The next and most important ingredient of all is the application of skills and knowledge because training is useless unless learning can be applied. Thus, learning and training are valuable not only for the firm performance but also to the individual performance.

On the other hand, learning and training leads to enhanced effectiveness, success and positive attitudes toward profit orientations. Training and learning improves the job skills and knowledge at 360 degrees of the organization (Haft & Umble 2003). Training advance the morale of the staff and end users and helps the employees recognize with organizational objectives (Sims, 1990). On the other, learning and training develop individual performance through serving them make right decisions and assisting in problem solving techniques, motivating and achieving self-development and self-confidence, helping employees handle work pressure, frustration, tension, and job level conflicts, increasing job satisfaction, acknowledgement and moving the end users toward individual goals though refining interaction skills (Sims, 2002).

**Association of SAP with Financial Performance**

SAP as ERP although increasing a firm financial performance while decreasing the cost of information technology infrastructure (Shang & Seddon, 2002). According to (Velcue, 2007) that SAP as ERP are operationalizing several financial and non-financial performance. Poston and Grabski (2001) stated that there is no relation between the implementation of SAP as ERP and firm financial performance however another study which was conducted by Hayes, Hunton and Reck (2001) established significant effect of SAP as ERP and firm financial performance. Similarly a study related to firm financial performance which was conducted by (Lee, Hond and Katerattanakul 2004) and found achievable performance in one of the most and common indicator of financial performance in return of assets (ROA) as well as return on investment (ROI).

Another study was conducted by (Nicolaou, 2004) who examined the long lasting impact of SAP as ERP implementation of firm financial performance. In this regards, the data was obtained from 247 listed companies including most important eight indicators of financial performance besides (operating cash flow, working capital, current ratios, debt to equity ratio, LOB revenue vs target, LOB expense vs budget, quick ration and customer satisfaction). The results of this study was however found negative but after two years implementations of SAP, the financial performance indicators were found enhancing positively than of those firms non-adopting SAP as ERP.

According to Chand et al. (2005) that the benefits of SAP as ERP implementation decrease operational costs of a firm while enhance the overall financial performance which tends to leads profit. Poston and Grabski (2001) examined the effect of SAP as ERP, accordingly they had selected fifty firms whom implemented SAP as ERP for the last three years. The results indicated limited and insignificant positive correlation between SAP as ERP and firm performance.

Insofar financial performance is concerned, a number of research studies showed that SAP as ERP system are positively contributing financial performance by adopting business firms (Sudzina, 2011). In contrast, (Poston and Grabski, 2001) itemized that there is no association between SAP as ERP and firm financial performance after comparison of profit before and after implementation of SAP as ERP system. Hunton, 2003 carried out a study and reported that those organizations whom adopted SAP as ERP had healthier financial performance than those of not-adopted business organizations.

Similarly, (Velcu, 2005 tested two financial performance indicators such as (ROI and ROA). The result indicated that those firms which adopted SAP as ERP had higher financial performance than who adopted comparatively lower performance. Although, the results of both (Hunton et al. 2003) and (Poston & Grabski, 2001) are showed that no improvement was found in financial performance of those whom not adopted of SAP as ERP, however they found a significant decrease in the financial performance by non-adopters of SAP as ERP. A comparative study was conducted by one of the developed country like USA by Hendricks et al. (2007). They collected data from SAP As ERP adopter business firms including 140 supply chain management, 80 CRM and their matching non-adopting competitors in order to find out the impact of SAP on financial performance of adopter and nor-adopter business firms. The result was found mixed-up, as those firms which had adopted SAP as ERP were found highly significant effect on profitability but insignificant in stock return.

The above critical review regarding SAP associated with firm financial performance shows different views of researchers concerning implementation of SAP as ERP and firm financial performance. According to demographics, economic and technological differences, different results have come out to the pool of knowledge. Also the role of SAP as ERP have examined in both developed and developing countries found contradictory in results. There is gap which need further exploration to find out how much contradictory responses are found in past studies.

This study has examined that the implantation of new technology creates a need for training of employees and how trainings improve individual performance in achieving the desired outcomes. Prior studies mostly focused on the role of training on individual performance (Kozlowski et al. 2000) and desired outcomes however, the current study is different in a sense that researcher have examined that how trainings could further improve the individual performance with the use of technology. Further, the researcher will also tests for the sequential mediation of the trainings and individual performance in the relationship between the technology like SAP and desired outcomes with perceived financial performance which has rarely being investigated. This research is also significant because the researcher will try to explore some of its dimensions as per objectives of this study and will be open a way for future researchers.

## Research Design and Methodology

The quantitative study was employed to investigate the mediating effects of training and individual performance. In this regards, primary data was collected from the population of 500 SAP users in Accountant General Office KPK. 313 respondents were randomly selected as sample size including both male and females. Nexus to this, adopted questionnaire was used for data collection. 300 filled questionnaires were received from the respondents. 98% male while 2% female were participated in the survey. Different kinds of designated individual were participated in which 127 individuals were found senior accounts, 92 were Assistant Accountant Officers, 34 were Junior Accountant, and 16 were found Accountants. Most of the individuals (SAP) users were found qualified in which 96 were having the degree of M.Com, 48 were MBA, 22 were MA, 45 were B.Com, 20 were BA and 8 were MS degree holders. The rest were found having other qualification. Regarding marital status, 264 out of 300 were married while 36 individuals were found unmarried.

## Analysis and Discussion

The descriptive statistics was used by using SPSS of the total 300 SAP users (294 male and 06 females are presented in demographics table 14) who contributed in this study. Descriptive statistics for Individual Performance, SAP, Training and Desired outcomes with finacial performance are existing in table 13. The results of correlation existing in table 3, as expected, SAP is positively/ significantly correlated with IPer ($r = 0.675$, $p < 0.00$); accordingly, SAP is positively correlated with Training ($r = 0.550$, $p < 0.00$); and SAP is positively/ significantly correlated with Desire Output with perceived finacial performance ($r = 0.569$, $p < 0.00$) suggested that higher level of correlation is existing between variables.

Table 1 Reliabilities Scale

| Variable | Items | No. of Items | Cronbach's Alpha |
|---|---|---|---|
| SAP (SAP) | SAP1,SAP2, SAP3, SAP4, SAP5 | 5 | 0.778 |
| Individual Performance (IP) | IP1, IP2, IP3, IP4, IP5 | 5 | 0.756 |
| Training (TR) | TR1, TR2, TR3, TR4, TR5 | 5 | 0.812 |
| Desired outcomes With perceived finacial performance (DO) | DO1, DO2, DO3, DO4, DO5 | 5 | 0.885 |

According to the above results of table 1, Varimax normalized factor notation was used for analysis with the aim to measure the validity of the questions along with their items. The face validity of the adopted questionnaire was checked by experts of social sciences. The pilot study of the said questionnaire was done in prior studies. As per Saunder's et al., (2012) the normal range of Cronbach's Alpha of at least 0.7 (Khan et al., 2019) is required to confirm that questions in the construct are measuring what the research is intends to measure. George and Mallery, (2003) established a trash hold that "greater than .9 is Excellent, greater than .8 is Good, greater than .7 is Acceptable, greater than .6 is Questionable, greater than .5 is Poor, and greater than .5 will be Unacceptable.

High level of Cronbach Alpha considered to be the best results as the internal consistency of the items in the scale contribute high values of Alpha is somehow depends on the maximum numbers of questions/items used in the scale.

In the above table 1. SAP have 5 items and the internal consistence is found .778 comes in the rage of good, individual performance have 5 items and Alpha value is .756 comes in the range of Acceptable, training have 5 items and the value of alpha is .812 comes in the range of Good, and desired outcomes have also 5 items and alpha value is .885 comes near to Excellent.

In the next step, regression analysis was used by using SPSS PROCESS macro as recommended by Hayes (2004) to estimate mediating role of training in the relationship between SAP and individual performance then, the mediating role of training in between SAP and desired outcomes and finally the sequential mediation of training and individual performance in the relationship between SAP and desired outcomes.
The path analysis along with proposed hypotheses and results are presented in model 1, model 2 and model 3 respectively.

Model 1:

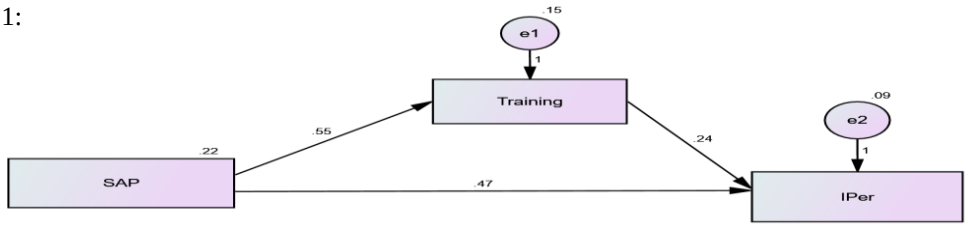


Table 2: AMOS estimates Model 1

| Relationships | With | Estimate | S.E. | C.R. | P | Label |
|---|---|---|---|---|---|---|
| Training | <--- SAP | .548 | .048 | 11.376 | *** | |
| IPer | <--- Training | .240 | .044 | 5.473 | *** | |
| IPer | <--- SAP | .475 | .044 | 10.855 | *** | |

Variances: (Group number 1 - Default model)

According to the above table 2, estimates of model 1 produced in AMOS shows all significant as p value is below 0.5.

Proposed hypotheses for model 1

H1a: SAP has significant impact on training.
H1b: Training has significant impact on individual performance.
H1c: SAP has significant and direct impact on Individual Performance
H1d: There is a mediation from SAP to Individual performance through Training.

Table 3: Regression Results

| Relationships | $R^2$ | F | Sig |
|---|---|---|---|
| SAP and Training | .3021 | 128.9888 | .0000 |
| Training with Individual Performance | .7108 | 151.6410 | .0000 |
| SAP with Individual Performance (Total Effect Model) | .6750 | 249.4506 | .0000 |

Obtaining the result of regression table 3 under the intervening analysis, result demonstrates that SAP is positively anticipated training with ($R^2$ = .3021, F = 128.98, p< .0000). Therefore hypothesis H1a is proven which stated that SAP has significant influence training. Similarly, it was found that training positively predicted individual performance with ($R^2$ = .7108, F = 151.64, p< .0000). Therefore hypothesis H1b is proven which stated that training has significant role in the formation of individual performance. Accordingly our third hypothesis H1c which stated that SAP has significant and direct impact on individual performance with ($R^2$ = .6750, F = 249.45, p< .0000).

Effects of direct, indirect and total can be obtained from table 4. The total effect (.6064) and direct effect (.4748) was found significant at p< .0000. Whereas the effect size in the occurrence of the mediating variable that is training shows to be .1316 with no zero (0) value lying in between Boot-Upper LCI (0.1880) and Boot-Lower LCI (0.0809). According to Hayes & Preacher (2004), the occurrence of non-zero (0) value concerning the upper & lower boot restriction reveals that the mediating variable mediates the independent variable--dependent variable relationship. Nexus to above statistics, a plentiful evidence is available to admit H1d which stated that there is a mediation of training from SAP to individual performance. Hence this mediation is considered as partial mediation.

Table 4: Mediating effect of Training in between SAP and Individual Performance

| | Effect | SE | T | P | BootLLCI | BootULCI |
|---|---|---|---|---|---|---|
| Total effect | .6064 | .0384 | 15.7940 | .0000 | .5309 | .6820 |
| Direct effect | .4748 | .0439 | 10.8182 | .0000 | .3885 | .5612 |
| Indirect effect | .1316 | .0275 | ---- | ---- | .0809 | .1880 |

In our first model, researcher has set two hypotheses, as per the results, both of the hypotheses accepted and result shows that there is partial and significant impact of SAP on individual performance (H1a) while the mediating role of training between SAP and individual performance is also accepted (H1b) as there is partial mediation of training between SAP and individual performance.

The result shows that, SAP has positive and significant impact on Individual performance as coefficient of SAP is found (.6064, S.E = .0384, t = 15.7940, p< .0000). The result depicts that SAP influence the performance of individuals positively.

Model 2:

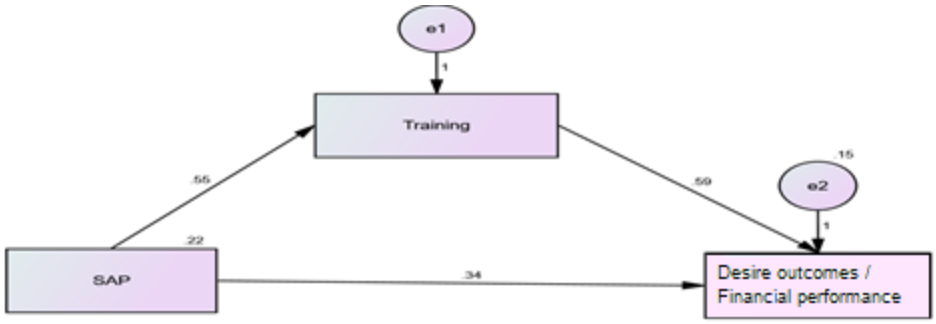



Table 5: AMOS estimates Model 2

| Relationships | With | Estimate | S.E. | C.R. | P | Label |
|---|---|---|---|---|---|---|
| Training | <--- SAP | .548 | .048 | 11.376 | *** | |
| D-outcomes | <--- Training | .586 | .057 | 10.330 | *** | |
| D-outcomes | <--- SAP | .338 | .057 | 5.979 | *** | |

According to the above table 5, estimates of model 2 produced in AMOS shows all significant as p value is below 0.5.

Proposed hypotheses for model 2:

H2a: SAP has significant impact on training.
H2b: Training has significant impact on desired outcomes with finacial performance.
H2c: SAP has direct and significant impact on desired outcomes with finacial performance.
H2d: There is a mediation between SAP and Desired outcomes with finacial performance through Training.

Table 7: Regression Results:

| Relationships | $R^2$ | F | Sig |
|---|---|---|---|
| SAP and Training | .3021 | 128.9888 | .0000 |
| Training with Desired outcomes | .5020 | 149.6789 | .0000 |
| SAP with Desired outcomes(Total Effect Model) | .3243 | 142.9926 | .0000 |

Obtaining the result of regression from table 7 analysis under the mediation effect, it was found that SAP is positively predicted training with ($R^2$ = .3021, F = 128.98, p< .0000). Therefore hypothesis H2a is proven which stated that SAP has significant impact on training. Similarly, it is also proved that training positively predicted desired outcomes with ($R^2$ = .5020, F = 149.67, p< .0000). Therefore hypothesis H2b is proven which stated that training has significant impact on desired outcomes. Accordingly our third hypothesis H2c which stated that SAP has significant and direct impact on desired outcomes with ($R^2$ = .3243, F = 142.99, p< .0000). Result shows that this hypothesis is also supported. Regarding the last hypothesis of model 2, it is also positive and significant as we found the mediation of training between SAP and Desired outcomes.

Table 8: Mediating effect of training between SAP and Desired outcomes

| | Effect | SE | T | P | BootLLCI | BootULCI |
|---|---|---|---|---|---|---|
| Total effect | .6590 | .0551 | 11.9579 | .0000 | .5506 | .7675 |
| Direct effect | .3380 | .0567 | 5.9586 | .0000 | .2264 | .4497 |
| Indirect effect | .3210 | .0421 | ---- | ---- | .2406 | .4071 |

Direct, indirect and total effects can be obtained from above table 8. The total effect (.6590) and direct effect (.3380) shows significant result as p< .0000. However the effect size in the occurrence of the mediator of training curved to be .3210 as there is no zero (0) value present in between Boot-ULCI (0.4071) and Boot-LLCI (0.2406). According to Hayes & Preacher (2004), that if there is non-zero (0) value in between the upper and lower boot parameters then it will clearly shows that there is mediation between the independent variable and dependent variable. Nexus to the above statistics, there is plentiful confirmation to consent H2d which stated that there is a mediation of training from SAP to desired outcomes.

Model 3: Sequential mediation

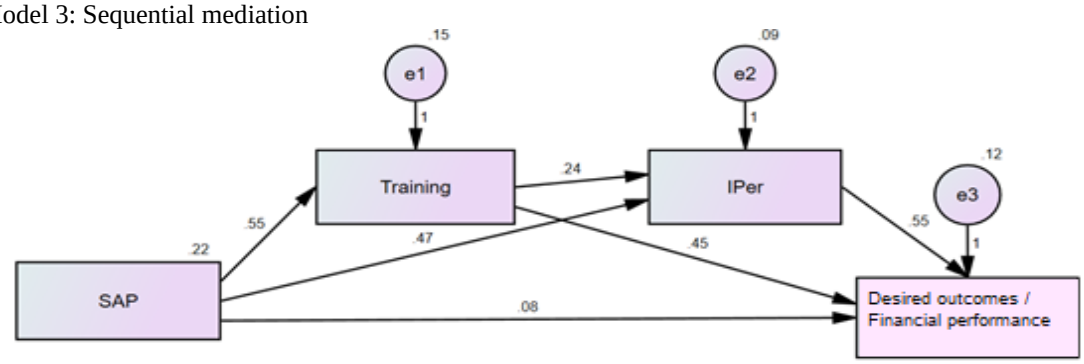



Table 9: AMOS estimates Model 3

| Relationships | With | Estimate | S.E. | C.R. | P | Label |
|---|---|---|---|---|---|---|
| Training | <--- SAP | .548 | .048 | 11.376 | *** | |
| IPer | <--- Training | .240 | .044 | 5.473 | *** | |
| IPer | <--- SAP | .475 | .044 | 10.855 | *** | |
| D-outcomes | <--- IPer | .553 | .068 | 8.188 | *** | |
| **D-outcomes** | **<---SAP** | **.075** | **.060** | **1.250** | **.211** | |
| D-outcomes | <---Training | .453 | .054 | 8.425 | *** | |

According to the table 9 estimates of model 3 produced in AMOS shows insignificant association between desired outcomes and SAP while the rest were found significant as p value is < 0.5.

Proposed hypotheses for model 3:

H3a: SAP has significant impact on training.
H3b: Training has significant impact on individual performance.
H3c: SAP has significant impact on individual performance.
H3d: Individual performance has significant impact on desired outcomes.
H3e: SAP has direct and significant impact on desired outcomes with finacial performance.
H3f: Training has significant impact on desired outcomes with finacial performance.
H3g: There is a sequential mediation from SAP to training, training to individual performance, and individual performance to desired outcomes with finacial performance.

Table 10: Regression Result:

| Relationships | $R^2$ | F | Sig |
|---|---|---|---|
| Training with SAP | .3021 | 128.9888 | .0000 |
| Individual Performance with SAP | .5052 | 151.6410 | .0000 |
| Desired outcomes with SAP | .5932 | 143.8676 | .0000 |

As per the results of table 10, Receiving the results of regression analysis under the mediation, it is clearly shows that SAP positively influenced training with ($R^2$ = .3021, F = 128.98, p< .0000). Therefore hypothesis H3a is proven which stated that SAP has significant influence on training. Similarly, it is also proved that SAP positively predicted individual performance with ($R^2$ = .5052, F = 151.64, p< .0000). Therefore hypothesis H3b is proven which stated that SAP has significant impact on individual performance. Accordingly our third hypothesis H3e which stated that SAP has significant and direct impact on desired outcomes with ($R^2$ = .5932, F = 143.86, p< .0000). Result shows that this hypothesis is also supported.

Table 11: Mediating effect of training between SAP and Desired outcomes

| | Effect | SE | T | P | | BootLLCI | BootULCI |
|---|---|---|---|---|---|---|---|
| Direct effect | .0754 | .0606 | 1.2433 | .2148 | | -.0439 | .1947 |
| Indirect effects | | | | | | | |
| Ind | | .2482 | .0393 | ----- | ----- | .1723 | .3274 |
| Ind | | 2.2626 | .0432 | ----- | ----- | .1843 | .3534 |
| Ind | | 3.0728 | .0175 | ----- | ----- | .0426 | .1106 |
| Total effect | .5836 | .0549 | | ---- | ---- | .4764 | .6914 |

Direct, indirect and total effects can be obtained from table 11. The direct effect (.0754) came out to be insignificant at p> .05 and found (p = .2148). Where the value of 't' is also insignificant found (1.243) which is below than 1.96. However, zero (0) number is present in between Boot-ULCI (0.1947) & Boot-LLCI (-.0439). As per the threshold, if zero is laying between lower and upper boot limits, it shows that there is no mediation between independent variable and dependent variable (Hayes & Preacher, 2004). Hence, we found insignificant relationship and there is complete and full sequential mediation found in relationships.

Given the above statistics, there is ample evidence to reject hypothesis H3e which stated that SAP has direct and significant impact on desired outcomes with perceived financial performance. Regarding the total effect of sequential mediation statistics, we found that indirect effect of (Ind1) between SAP and training found significant as the presence of non-zero value between ULCI(.3274) and LLCI(.1723) limits demonstrates that mediation variable mediate the independent-dependent variable relationship.

Similarly, another indirect effect (Ind2) of SAP with individual performance and individual performance with desired outcomes is found significant as the presence of non-zero value between ULCI(.3534) and LLCI(.1843) limits establishes that mediation variable mediate the independent-dependent variable relationship. Finally the indirect effect (Ind3) of SAP with training, training with individual performance and individual performance with desired outcomes were found significant as the presence of non-zero value between ULCI(.1106) and LLCI(.0426) limits establishes that mediation variable mediate the independent variable and dependent variable relationship (Preacher and Hayes 2004).

After analysis, table 12 shows the result of tested hypotheses.

Table 12 Hypotheses Results

| | Hypotheses | Remarks |
|---|---|---|
| H1a | SAP has significant impact on training. | Supported |
| H1b | Training has significant impact on individual performance. | Supported |
| H1c | SAP has significant and direct impact on Individual Performance | Supported |
| H1d | There is a mediation from SAP to Individual performance through Training | Supported |
| H2a | SAP has significant impact on training | Supported |
| H2b | Training has significant impact on desired outcomes with finacial performance | Supported |
| H2c | SAP has direct and significant impact on desired outcomes with finacial performance | Supported |
| H2d | There is a mediation between SAP and desired outcomes with finacial performance through Training | Supported |
| H3a | SAP has significant impact on training | Supported |
| H3b | Training has significant impact on individual performance | Supported |
| H3c | SAP has significant impact on individual performance | Supported |
| H3d | Individual performance has significant impact on desired outcomes with finacial performance | Supported |
| H3e | SAP has direct and significant impact on desired outcomes | **Not Supported** |
| H3f | Training has significant impact on desired outcomes with finacial performance | Supported |
| H3g | There is a sequential mediation from SAP to training, training to individual performance, and individual performance to Desired outcomes with finacial performance | Supported |

The results of this study are relatively supported by other studies prior to investigate in other organizations. According to Gartner (2019) research stated that most SAP as ERP implementations fail to deliver the desired outcomes because of ineffective or insufficient training. About all prior studies shows the importance of training but the important question here is, when a company should train and how should training? The present study shows that training should provide to individuals during the period of implementation. Another study prior to investigate in china stated that leadership's support, training abilities, and learning abilities can increase the chance of success of SAP as ERP implementation Chang, Yeung (2007). According to Chandrachekhar (2017) the impact of change management, transformation of skills and abilities, and training to the users of SAP as ERP software helping them to understand and comply with the new business process.

The present findings not only compliment prior studies by providing further support for a relation between SAP as ERP and desired outcomes with perceived financial performance, but also extend previous conclusions by highlighting the underlying training and individual performance factors that mediate the relation.

## Conclusion and Future Directions

PIFRA selected the SAP as ERP system as a solution to automate the financial management system of the Khyber Pakhtunkhwa. The dependent variable used in this study was the desired outcomes such as, (timeliness, completeness and accuracy of the financial statements) while including perceived financial performance like transparency in salaries, GP Fund and pension payments, accuracy in accounts information, delivery of financial management and audit functions, and customer satisfaction. The present

study was commenced with the aim to investigate the mediating effect of training and individual performance on the relationship between SAP and desired outcomes of the Account General (AG) office Peshawar KP Pakistan.

The study was remained focused on the role of three factors including SAP technology, individual performance and training. In this connection, a quantitative approach is employed and the data is collected through adopted questionnaire from 300 employees of Accounting General office Peshawar. The results of simple mediation showed that the relationship between SAP and individual performance is positively mediated by employees' trainings. Moreover, the relationship of SAP and desired outcomes is also positively mediated by employees training. The results of sequential mediation analysis showed that the relationship between SAP and desired outcomes is sequentially mediated by trainings to employees and individual performance. Thus, initiation of SAP increases organizational orientation toward employees training that has improve individual performance, which significantly contribute \towards the achievement of desired outcome. Statically results shows that without proper training and individual performance SAP doesn't improve the quality of desired outcomes with perceived financial performance. It is highly recommended that research seeks to contribute in terms of highlighting the role of employees training and individual performance in the successful adoption and effective use of the Technology like SAP by the public sector organizations.

In the terms of limitations, this study was done in one organization where SAP as ERP was successfully installed and operationalized. It is recommended and assumed that varying impacts or SAP as ERP system will be found in different organization including Education and Health sector of KP, Pakistan. Regarding the firm financial performance indicators, several other financial indicators needs to discover in the field of SAP as ERP in Pakistan

## Research Significance

The research is significant because it has investigated not only the effect of SAP technology; individual performance and training but also discover perceived financial performance through desired outcomes of Account General Office. The use of SAP technology and particularly the information technology (IT) has brought positive changes and improvement in the desired outcome which includes timeliness, completeness and accuracy of the financial statements. It's also includes the data security, integrity & reliability, and quick decision making in AG office Peshawar. This research is also significant as the researcher has explored some of its dimensions like importance of training and individual performance as mediating aspect of the research. Not only this, the researcher has opened a platform for those who are interested to explore the firm financial performance unexplored indicators associated with SAP as ERP.

## Research Contribution

The research seeks to contribute in terms of identification of training, individual performance and use of Technology (SAP) as a leading factor in commercialization and the role of account personals in post system application program applications scenarios also make a contribution to the literature of accounting. This research study may also be recommended to contribute towards policy making and implementation have been made in shape of advice for the CEO's, multinational organization, Government and practitioners and World Bank when undertaking such projects in future. For the first time the role HRM is examine the perceived financial performance with the use of SAP as technology, training and individual performance as an mediators. This may also contribute the literature of both finance and HRM.

Moreover, with affection to the current study, Pakistan was among development creators in addition to those Islamic nations which have established such a complex project of change that has incorporated all ranks of government beginning from the district level to federal level.

## Future Directions

One of the SAP as ERP software project is under process in the Engineering University Peshawar KP, Pakistan. Many other scholars and researchers of the province of KP, Peshawar can visit and conduct research on different phases of project life cycle including implementation, testing and maintenance.

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## Appendix

Table 13. Descriptive Statistics

| Variables | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| IPer | 300 | 3.00 | 5.00 | 4.0720 | .42483 |
| SAP | 300 | 2.80 | 5.00 | 4.2080 | .47288 |
| Training | 300 | 2.60 | 5.00 | 4.1667 | .47148 |
| DOutcomes | 300 | 2.60 | 5.00 | 3.9400 | .54729 |
| Valid N (listwise) | 300 | | | | |

Table 14. Demographics

| Gender | | | | | |
|---|---|---|---|---|---|
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Male | 294 | 98.0 | 98.0 | 98.0 |
| | Female | 6 | 2.0 | 2.0 | 100.0 |
| | Total | 300 | 100.0 | 100.0 | |
| **Marital Status** | | | | | |
| | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Married | 264 | 88.0 | 88.0 | 88.0 |
| | Single | 36 | 12.0 | 12.0 | 100.0 |
| | Total | 300 | 100.0 | 100.0 | |

Table 15. Correlation

| Variables | Type | IPer | SAP | Training | Doutcomes |
|---|---|---|---|---|---|
| IPer | Pearson Correlation | 1 | | | |
| | Sig. (2-tailed) | | | | |
| SAP | Pearson Correlation | .675** | 1 | | |
| | Sig. (2-tailed) | .000 | | | |
| Training | Pearson Correlation | .557** | .550** | 1 | |
| | Sig. (2-tailed) | .000 | .000 | | |
| Doutcomes | Pearson Correlation | .691** | .569** | .665** | 1 |
| | Sig. (2-tailed) | .000 | .000 | .000 | |
| | N | 300 | 300 | 300 | 300 |

All correlation coefficient are significant at $p < 0.00$.