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Mapping Social Support Networks among Knowledge Workers: A Sociological Analysis of Age and Professional Experience

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ABSTRACT

Growing body of recent research points that demographic variables are potentially associated with the social support workers receive. However, there is a limited amount of research on knowledge workers employed in agricultural research organizations. Thus, the present study aims to investigate differences in social support networks based on age and professional experience among knowledge workers in agricultural institutions of Punjab. The study used stratified simple random sampling along with a proportionate sampling technique. A total of 350 respondents were selected using these techniques. Data were collected through structured questions having information about age, professional experience and social support networks. The collected data were analyzed using the statistical software SPSS. The Kruskal–Wallis test was used to test the study hypotheses. The study also employed post hoc tests to identify subtle differences among the age and professional experience groups. Bonferroni-adjusted p-values were used to detect differences in the post hoc tests. The findings of the study demonstrate that there are significant differences in social support networks based on the age and professional experience of knowledge workers.

Keywords: *Age, professional experience, social support networks, knowledge workers.*

INTRODUCTION

Social support networks play an important role in employees' personal and professional lives (Caines & Treuren, 2023; Chen et al., 2025). People rely on family members, friends, colleagues, and peers for emotional encouragement, practical assistance, and advice (Bossé et al., 1990). These relationships help individuals cope with workplace demands and maintain psychological well-being (Chi et al., 2023). Researchers have consistently recognized social support as a valuable resource that strengthens resilience and improves work outcomes (Collins et al., 2016; Dust et al., 2018). Moreover, knowledge workers depend heavily on collaboration and information exchange. Similarly, researchers working in public research organizations perform intellectually demanding tasks that require teamwork, innovation, and continuous learning (Fasbender et al., 2019; Fasbender & Junker, 2025; Shahzad et al., 2023). They often face heavy workloads, limited research funding, publication pressure, and administrative responsibilities (Greer & Kirk, 2022). These challenges increase the importance of strong social support networks. Supportive relationships can reduce stress, encourage knowledge sharing, and improve employees' ability to perform their professional duties (Batool et al., 2023; Fischer & Beresford, 2014; Garmendia et al., 2023).

The agricultural research organizations of Punjab, Pakistan, represent an important component of the country's agricultural innovation system. Researchers in these organizations generate scientific

knowledge that supports agricultural productivity and food security (Greer & Kirk, 2022; Greller & Richtermeyer, 2006; Shahzad, Batool, Anjum, et al., 2024). Their work requires frequent interaction with colleagues, supervisors, universities, and professional communities. At the same time, they often experience organizational constraints such as limited resources, bureaucratic procedures, and increasing performance expectations (Harteis et al., 2015; Jiang et al., 2018). Social support networks may help researchers manage these challenges by providing emotional reassurance and professional guidance.

Previous studies have shown that social support contributes to job satisfaction, organizational commitment, employee well-being, and work engagement (Jokisaari et al., 2024; Jolly et al., 2020; Kammeyer-Mueller et al., 2013; Kiema-Junes et al., 2020). However, individuals do not experience social support equally. Personal characteristics such as age and professional experience may shape the development and use of support networks (Kröner & Müller, 2022; Kubovcikova & Van Bakel, 2021; Shahzad, Batool, & Sajid, 2024; Shahzad et al., 2025). Seasoned employees usually possess broader professional relationships and stronger interpersonal skills developed over time. Likewise, employees with greater professional experience often establish stronger workplace connections that facilitate access to advice and emotional support. In contrast, younger and less experienced employees may still be developing these relationships.

Although scholars have extensively examined workplace social support, most studies have focused on its effects on organizational outcomes rather than demographic differences (Lin & Lachman, 2023; Matthews et al., 2010; Oh et al., 2022; Olsen et al., 2024). Evidence from developing countries remains limited, especially within public research organizations. In Pakistan, empirical research examining variations in social support networks among knowledge workers is scarce. Existing studies have largely concentrated on teachers, healthcare professionals, or corporate employees, leaving agricultural researchers relatively unexplored. Therefore, the present study examines whether social support networks differ across age groups and levels of professional experience among knowledge workers employed in agricultural research organizations in Punjab, Pakistan.

LITERATURE REVIEW

Social support refers to the emotional, informational, instrumental, and interpersonal assistance that individuals receive from people within their social environment (Shaw et al., 2007; Shen et al., 2025). Social support networks include family members, friends, colleagues, relatives, and peers who provide encouragement, advice, and practical help during difficult situations (Song et al., 2024; Taneva et al., 2016). According to the stress-buffering perspective, supportive relationships reduce the negative effects of stressful experiences by improving individuals' coping capacity (Veth et al., 2018; Wang et al., 2022). Within organizations, social support promotes cooperation, strengthens trust, and facilitates knowledge sharing among employees.

Knowledge workers particularly benefit from supportive professional relationships because their work depends on collaboration and continuous learning (Veth et al., 2018; Wang et al., 2022). Researchers frequently seek advice from colleagues, discuss research problems with peers, and rely on supervisors for professional guidance. These interactions improve both research productivity and psychological well-being. Positive workplace relationships also encourage innovation and strengthen employees' commitment to organizational goals (Zhaoyang et al., 2018).

Age is an important factor that may influence social support networks (Oh et al., 2022; Olsen et al., 2024; Shaw et al., 2007). Employees accumulate social relationships throughout their careers and gradually develop stronger professional and personal connections (Kubovcikova & Van Bakel, 2021; Lin & Lachman, 2023). Older employees often possess larger and more stable networks because they have spent more time building trust with colleagues and professional communities (Oh et al., 2022; Olsen et al., 2024). They may also have greater confidence in seeking assistance when needed. Younger employees, however, often remain in the early stages of network development and may have fewer established workplace relationships. Empirical studies have reported significant age-related differences

in perceived social support, although the direction and magnitude of these differences vary across organizational settings (Lin & Lachman, 2023; Matthews et al., 2010).

Professional experience may also influence employees' access to social support. Experienced employees usually possess broader organizational knowledge and stronger interpersonal relationships. They interact with more colleagues, participate in professional activities, and develop mentoring relationships over time (Oh et al., 2022; Olsen et al., 2024; Shaw et al., 2007). These experiences increase opportunities to receive emotional encouragement, professional advice, and practical assistance. Employees with limited experience often depend on a smaller number of contacts and may receive less workplace support during the early stages of their careers. Previous research suggests that experienced employees generally report stronger workplace support because they have invested more time in developing professional networks (Shahzad et al., 2023; Shahzad, Batool, Anjum, et al., 2024; Shahzad, Batool, & Sajid, 2024; Song et al., 2024; Taneva et al., 2016; Veth et al., 2018).

Research organizations provide a unique setting for examining social support networks. Scientific research depends on teamwork, interdisciplinary collaboration, and continuous interaction among researchers. Strong support networks encourage information exchange, improve problem solving, and facilitate career development (Batool et al., 2023; Greller & Richtermeyer, 2006; Harteis et al., 2015; Jiang et al., 2018; Jokisaari et al., 2024; Shahzad et al., 2025). In agricultural research organizations, collaboration among scientists becomes particularly important because research projects often require diverse expertise and long-term cooperation. Support from colleagues and peers also helps researchers manage publication pressure, administrative demands, and resource limitations.

Despite growing interest in workplace social support, limited evidence exists regarding demographic differences among knowledge workers in Pakistan. Most studies have examined social support as a predictor of employee outcomes rather than as a characteristic that varies across employee groups. Research focusing on agricultural researchers remains especially scarce. This gap justifies examining whether social support networks differ according to age and professional experience. Based on the reviewed literature, the present study proposes the following hypotheses:

H1*:* There is a statistically significant difference in social support networks based on age groups.

H2: There is a statistically significant difference in social support networks based on professional experience.

METHODOLOGY

The population of the study is knowledge workers working in various attached wings that work under the agriculture department of the Government of Punjab. Thirteen attached wings work under this department. Each wing works on a specific area of agriculture. For example, the Soil Survey of Punjab conducts regular surveys to assess the quality of soil for crops. Agricultural Information, Punjab is responsible for the dissemination of the latest agricultural research. The research wing named Ayub Agricultural Research Institute Faisalabad (AARI) is tasked with researching various crops that are grown in Punjab.

The target population of the study is all knowledge workers working in agricultural research institutes that fall under the umbrella of the agricultural research wing of Punjab, Pakistan. These institutes research various crops. These institutes are in various regions of the Punjab province. The sampling frame for this study consists of a list of research institutes from which the sample was drawn. This sampling frame has all knowledge workers working in agricultural research institutes that make up the agricultural research wing of Punjab. These research institutes include a variety of specialized research institutes. Each research institute contributes a specific number of knowledge workers to the sampling frame. For instance, the Agricultural Biotechnology Research Institute in Faisalabad contributed 20 respondents, while Rapid Soil Fertility Research Institute, Lahore provided the largest number, with

124 knowledge workers. Institutions of a smaller scale, such as the Potato Research Institute in Sahiwal, had as few as six respondents. The sampling frame, which includes research institutes dealing with a variety of crops, soil sciences, and 71 areas of environmental research, ensures comprehensive coverage of the knowledge workers employed at agricultural research institutes situated all over Punjab. Sample frame of all knowledge workers was obtained from the Main Library and IT Department AARI, Faisalabad. This department maintains data about workers employed in various agricultural research institutes located across Punjab province.

The study employed a quantitative and cross-sectional research design to examine differences in autonomy orientation among knowledge workers across age and professional experience groups. Data were collected through a structured self-administered questionnaire from workers working in agricultural research organizations. A stratified random sampling technique was used to collect data. Work exploitation was measured using three items assessing workers' perceptions that they were exploited by their employer, paid less than fairly for the work they performed, and that their employer benefited more from their work than they did. Respondents rated each item on a five-point Likert scale ranging from 1 to 5. Descriptive statistics were computed to summarize respondents' characteristics and levels of family-work conflict. As the data did not satisfy the assumptions of normality, the Kruskal–Wallis H test was used to examine differences in autonomy orientation across age groups and professional experience groups. When the omnibus test was statistically significant, post hoc pairwise comparisons with adjusted p-values were conducted to identify specific group differences.

RESULTS AND DISCUSSION

This section starts with the reliability and validity analysis of the study scale of social support networks. Then, it moves to descriptive statistics to find difference in social support networks based on age and professional experience. Next, inferences tests of Kruskal Wallis are applied and results are presented to test the study hypotheses. Finally, post hoc tests are applied to compare each age and professional group.

Table 1

Loadings, reliability, and collinearity of social support networks construct

Items	**Loadings**	**Alpha**	**CR**	**CS**
Social support networks scale		**.926**	**.922**	
Social support networks 1	.894			.293
Social support networks 2	.877			.318
Social support networks 3	.897			.290
Social support networks 4	.873			.324
Social support networks 5	.851			.387
Social support networks 6	.881			.256
Social support networks 7	.863			.321

Note: CR = composite reliability, CS = collinearity statistics

Table 1 presents the measurement properties of the social support networks construct. All seven items were loaded strongly on the construct. The factor loadings ranged from 0.851 to 0.897, which exceeded the recommended threshold of 0.70. These values show that each item measured the construct well and contributed meaningfully to the scale. Additionally, the scale also demonstrated excellent internal consistency. The Cronbach's alpha value was 0.926, which was well above the acceptable level of 0.70. Likewise, the composite reliability (CR) value was 0.910, confirming that the items consistently measured the same underlying construct. These findings indicate that the scale produced reliable and consistent responses.

Moreover, the collinearity statistics (CS) ranged from 0.290 to 0.387. These values remained well below the recommended threshold. Thus, there was no serious issue of multicollinearity in this study. Each item provided unique information and did not overlap excessively with the other indicators. The results of reliability results confirm that the social support networks scale has strong psychometric properties. The high factor loadings, excellent reliability, and low collinearity statistics demonstrate that the construct is reliable and appropriate for further statistical analyses.

Table 2 tabulates the descriptive statistics of social support networks across different age groups and levels of professional experience. The results show noticeable differences in the mean scores across both demographic characteristics. Among the age groups, researchers aged 21–33 years reported the highest level of perceived social support (M = 17.87, SD = 3.30). Their mean score was substantially higher than those of the other age groups. Researchers aged 34–46 years reported a mean score of 12.34 (SD = 3.34), while those aged 47–60 years reported the lowest mean score (M = 11.86, SD = 2.35). The confidence intervals showed little overlap between the youngest age group and the older groups. Simply put, meaningful differences in perceived social support exist.

Table 2

Descriptive statistics of social support networks based on age and professional experience

Groups	**N**	**Mean**	**S. D**	**CI**		**Min**	**Max**
Age				LB	UB		
21-33	122	17.87	3.30	17.28	18.46	10	25
34-46	130	12.34	3.34	12.34	13.49	5	19
47-60	98	11.86	2.35	11.39	12.33	8	15
Professional Experience							
1-10	101	19.04	2.13	18.62	19.16	14	25
11-20	80	11.36	2.15	10.88	11.84	7	16
21-30	83	14.43	3.29	13.71	15.15	5	19
31-40	86	11.52	2.033	11.09	11.96	8	18

Note: S.D = standard deviations, CI = confidence intervals, LB = lower bound, UB = upper bound

Furthermore, differences appeared across professional experience groups. Researchers with 1–10 years of experience reported the highest level of social support (M = 19.04, SD = 2.13). In contrast, those with 11–20 years of experience reported the lowest mean score (M = 11.36, SD = 2.15). Researchers with 21–30 years of experience had a moderate level of perceived social support (M = 14.43, SD = 3.29), whereas those with 31–40 years of experience reported a lower mean score (M = 11.52, SD = 2.03). Consequently, the descriptive statistics suggest that younger researchers and those with fewer years of professional experience perceived stronger social support networks than their older and more experienced. These patterns provide initial evidence of group differences.

Table 3

Comparative Analysis of Social Support Networks Across Age and Professional Experience Groups

Groups	**n**	**Mean rank**	**Median (Q1, Q3)**	**df**	**X^2**	**P**
Age Groups				2	142.867	.000
21-33	122	261.91	18 (16, 20)			
34-46	130	142.15	12 (10, 15)			
47-60	98	112.17	12 (10, 14)			
Professional Experience				3	222.153	.000
1-10	101	290.84	19 (18, 20)			
11-20	80	99.91	12 (10, 12)			
21-30	83	182.73	15(12, 17)			

31-40	86	103.38	12 (10, 13)			

Table 3 tabulates the results of the Kruskal–Wallis test comparing social support networks across age groups and professional experience groups. The analysis revealed a significant difference in social support networks across age groups, $\chi^2(2) = 142.867$, $p < .001$. Researchers aged 21–33 years had the highest mean rank (261.91) and a median score of 18 (Q1 = 16, Q3 = 20). Researchers aged 34–46 years reported a lower mean rank (142.15) with a median of 12 (Q1 = 10, Q3 = 15). Those aged 47–60 years had the lowest mean rank (112.17) and a median of 12 (Q1 = 10, Q3 = 14). These findings reveal that younger researchers perceived stronger social support networks than older researchers. Therefore, the first hypothesis, which proposed significant differences in social support networks across age groups, is supported.

The Kruskal–Wallis test also showed a significant difference in social support networks across professional experience groups, $\chi^2(3) = 222.153$, $p < .001$. Researchers with 1–10 years of professional experience reported the highest mean rank (290.84) and a median score of 19 (Q1 = 18, Q3 = 20). Researchers with 21–30 years of experience reported moderate levels of social support, with a mean rank of 182.73 and a median of 15 (Q1 = 12, Q3 = 17). In contrast, researchers with 11–20 years and 31–40 years of experience reported the lowest levels of perceived social support, with mean ranks of 99.91 and 103.38, respectively. Their median scores were 12 (Q1 = 10, Q3 = 12) and 12 (Q1 = 10, Q3 = 13). In simple words, the perceived social support varied significantly across professional experience groups. Therefore, the second hypothesis is also supported.

Table 4

Pairwise Comparisons of Social Support Networks Across Age and Professional Experience Groups

Group 1-Group 2	Test Statistic	S. E	Test Statistic	p	Adj. p
Age					
47-60-34-46	29.985	13.470	2.226	.026	.078
47-60-21-33	149.737	13.659	10.963	.000	.000
34-46-21-33	119.752	12.692	9.435	.000	.000
Experience					
11-20-31-40	-3.465	15.640	-.222	.825	1.000
11-20-21-30	-82.822	15.776	-5.250	.000	.000
11-20-1-10	190.924	15.070	12.669	.000	.000
31-40-21-30	79.357	15.493	5.122	.000	.000
31-40-1-10	187.459	14.774	12.688	.000	.000
21-30-1-10	108.102	14.918	7.247	.000	.000

The significance level is .050.
Significance values have been adjusted by the Bonferroni correction for multiple tests.

Final part of the results and discussion section tabulates the results of the Bonferroni-adjusted pairwise comparisons of social support networks across age groups and professional experience groups. The results identify the specific groups that differed significantly after controlling multiple comparisons. The results found that among the age groups, researchers aged 21–33 years reported significantly higher levels of social support than those aged 34–46 years (adjusted $p < .001$) and 47–60 years (adjusted $p < .001$). However, the difference between the 34–46 years and 47–60 years groups was not statistically significant (adjusted $p = .078$). These findings suggest that younger researchers perceived stronger social support networks than both middle-aged and older researchers, whereas the two older age groups reported comparable levels of perceived social support.

In addition to this, the pairwise comparisons also revealed significant differences across professional experience groups. Researchers with 1–10 years of experience reported significantly higher levels of social support than those with 11–20 years (adjusted $p < .001$), 21–30 years (adjusted $p < .001$), and

31–40 years (adjusted $p < .001$) of experience. In addition, researchers with 21–30 years of experience reported significantly higher levels of social support than those with 11–20 years (adjusted $p < .001$) and 31–40 years (adjusted $p < .001$) of experience. However, no significant difference emerged between the 11–20 years and 31–40 years' experience groups (adjusted $p = 1.000$). The post hoc analysis shows that the significant Kruskal–Wallis results were mainly driven by the higher levels of perceived social support among younger researchers and those with fewer years of professional experience. In contrast, researchers in the middle and later stages of their careers reported similar and comparatively lower levels of perceived social support.

In plain words, the study findings show that social support networks differ significantly across age groups and professional experience levels. Younger researchers and those with fewer years of professional experience reported stronger social support than their older and more experienced colleagues. Early-career researchers often build close relationships with peers, mentors, and supervisors as they adjust to the workplace (Dust et al., 2018; Fasbender et al., 2019; Fasbender & Junker, 2025; Fischer & Beresford, 2014). These interactions may increase their access to emotional and professional support (Greller & Richtermeyer, 2006; Harteis et al., 2015; Jiang et al., 2018).

In contrast, experienced researchers may face greater administrative responsibilities, leadership roles, and work demands that limit opportunities for social interaction (Jolly et al., 2020; Kammeyer-Mueller et al., 2013; Kiema-Junes et al., 2020). The post hoc analysis further showed that the youngest age group and the least experienced employees differed significantly from most other groups, whereas the older age groups and the more experienced groups reported similar levels of social support. These findings agree with previous studies that suggest workplace relationships change over the course of a career and that employees at different career stages perceive social support differently (Fasbender et al., 2019; Fasbender & Junker, 2025; Fischer & Beresford, 2014). Research organizations should therefore strengthen mentoring, peer collaboration, and professional networking opportunities for researchers at all career stages to promote a supportive work environment.

CONCLUSION

The present study set out to find differences in social support networks based on age and professional experiences of researchers. The study found that there are statistically significant differences in social support networks among knowledge workers belonging to different age and professional groups. New, novice and relatively less experienced researchers are more likely to get social support from friends, colleges, and their supervisors. However, more seasoned and experienced researchers get less social support from their acquaintances and coworkers. The study has important implications for organizational production, performance, and engagement. Social support networks are directly and indirectly linked with organizational positive and negative outcomes.

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